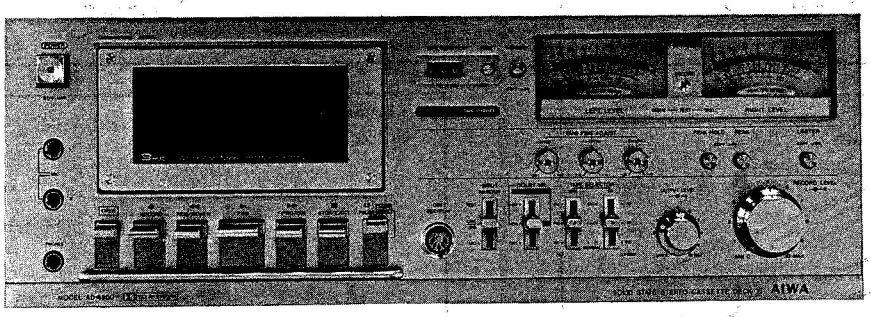
STEREO CASSETTE DECK WITH DOLBY-NR SYSTEM

1977

MODEL AD-6800H,EE,UK

AIWA®

(SERVICE MANUAL)



ISO

Set using ISO screws

DATE OF ISSUE 25/9/1977

SPECIFICATIONS

Semiconductors:	8 IC's, 86 transistors, 10 FETs, 65 diodes & 4 LED's
Power source:	AD-6800H,EE: AC 110~120 V/ 220~240 V (switchable) 50/60 Hz
	AD-6800UK: AC 120 V/240 V (switchable) 50/60 Hz
Power consumption:	20W
Dimensions:	450(W) x 162(H) x 335(D) mm
Weight:	10 kg
Track system:	4-track 2-channel stereo
Tape speed:	4.76 cm/sec. ±1%
Wow & flutter:	0.1% (Accoding to DIN 45 500) 0.05% (WRMS) at pB
Automatic shut-off: action time	3 ±2 sec.
Pinch roller pressure:	520 ±40 g
Take-up torque:	50 ±10 g-cm
FF & rewind torque:	110^{+50}_{-10} g-cm
FF time:	95 ±10 sec (w/C-60 cassette)
Rewind time:	100 ±10 sec (w/C-60 cassette)
Playback output: (TTA-161)	1.1 ±0.05 V (LINE/DIN)
Playback noise:	Less than 4.5 mV (LH) Less than 3.0 mV (Fe-Cr, CrO_2)
Rec./pb output: (400 Hz 0 VU)	0 VU ±0.5 dB (LINE/DIN)
Rec./pb distortion: (400 Hz 0 VU)	Less than 1.5% (LH) Less than 1.5% (Fe-Cr) Less than 3.0% (CrO_2)
Rec./pb S/N: (400 Hz 0 VU) (Un-Weighted)	More than 43/45 dB (LH, DOLBY OFF/ON) More than 45/48 dB (Fe-Cr, DOLBY OFF/ON) More than 45/48 dB (CrO_2, DOLBY OFF/ON)
Channel separation:	More than 28 dB (at 1 kHz 0 VU)
Cross talk:	More than 65 dB (at 1 kHz 0 VU)
Erasing ratio:	More than 60 dB (400 Hz +10 VU)
VU meter display error:	±0.5 dB (at 400 Hz 0 VU + 3 dB)
Peak meter display error: (400 Hz, 0 VU: 0.775 V)	+10 VU ±1 dB 0 VU ±0.5 dB −10 VU ±1 dB −20 VU ±2 dB −30 VU ±1 dB

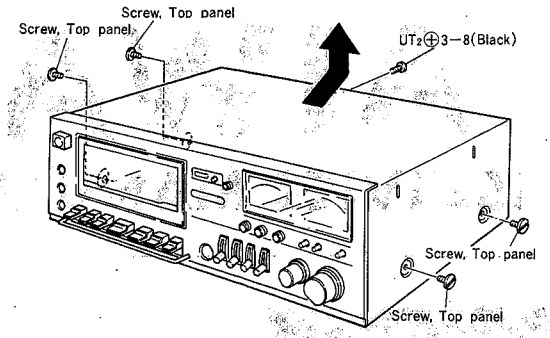
Bias frequency:	100 kHz ±10 kHz
Frequency response:	LH tape, 20~16 kHz (−10 dB) 30~15 kHz ($^{+2}_{-3}$ dB)
	Fe-Cr tape, 20~19 kHz (−10 dB) 30~17 kHz ($^{+2}_{-3}$ dB)
	CrO_2 tape, 20~18 kHz (−10 dB) 30~16 kHz ($^{+2}_{-3}$ dB)
	(at Dolby off, Rec./pb)
Motor:	38 pulse FG servo motor
Head:	Ferrite guard head (FGH)
Input:	MIC: Max. input semsitivity 0.25 mV (200 ohms ~ 10 k-ohms suitable)
	LINE IN: Max. input sensitivity 50 mV (More than 50 k-ohms)
	DIN: Max. input sensitivity 0.1 mV/k-ohms (3 k-ohms)
Output:	LINE OUT: Standard output level 0.775 V (0 VU) Optimum load impedance more than 50 k-ohms
	DIN: Standard output level 0.775 V (0 VU) Optimum load impedance more than 50 k-ohms
	PHONES: Load impedance 8 ohms to 150 ohms

- Specifications and external appearance are subject to change without notice due to product improvement.
- Dolby Noise Reduction System is licensed from Dolby Laboratories Incroporated.
- The name "Dolby" and the "Double D" symbol are trademarks of Dolby Laboratories Incorporated.

DISASSEMBLY INSTRUCTIONS

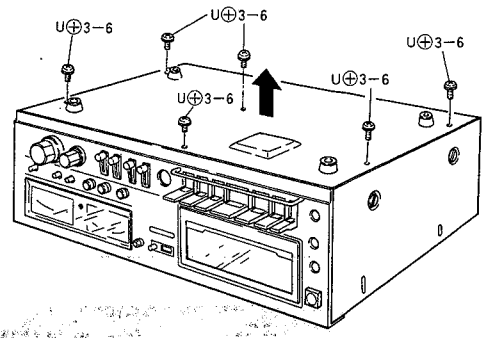
To Remove Case

Remove 5 screws.



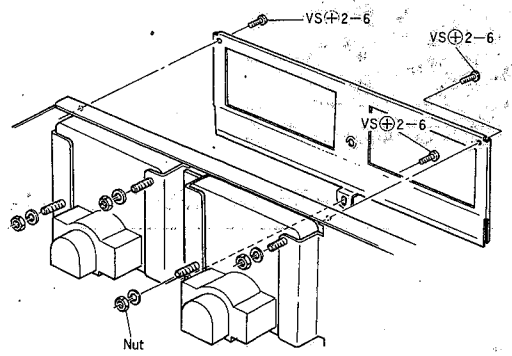
To Remove Back Cover

Remove 6 screws.



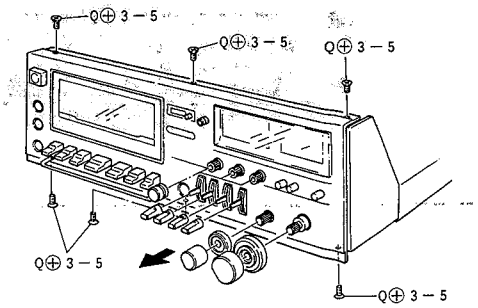
To Remove Level Meter

1) Remove 3 screws and 4 nuts.



To Remove Front Panel

Remove 6 screws and knobs.

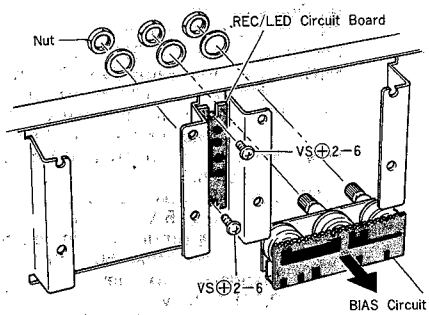


To Remove REC/LED Circuit Board

Remove 2 screws.

To Remove Bias Circuit Board

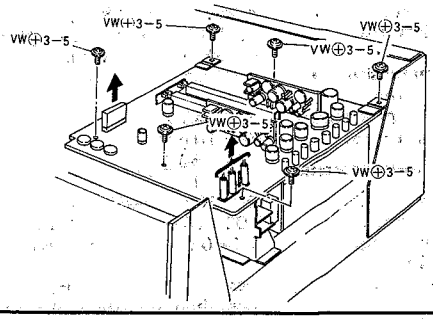
Remove 3 nuts.



To Remove Main Circuit Board

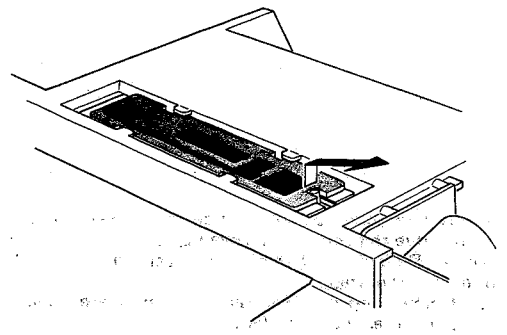
Remove 6 screws and 4 connectors

Note: The 3 1P connectors are located in different connecting positions according to the model since they are used to adjust the bias current. Therefore, check the connecting positions and always connect to their original positions when re-connecting.



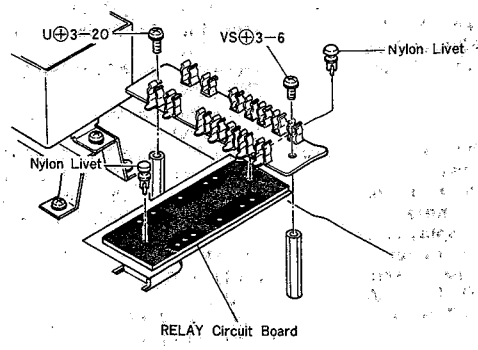
To Remove Room Lamp Circuit Board

Lift up the right side of the room lamp circuit board, and draw in the direction indicated by the arrow.

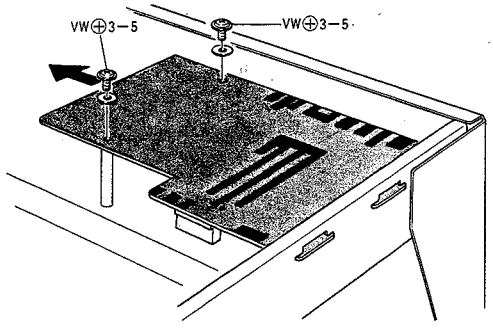


To Remove Relay Circuit Board

Remove 2 screws and 2 nylon rivets.

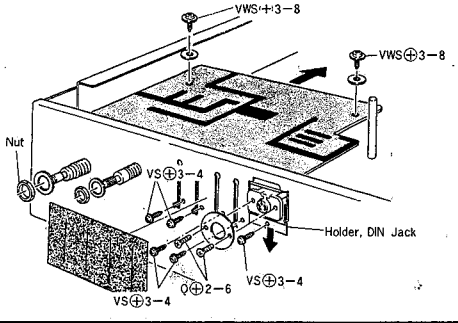


To Remove Power/OSC Circuit Board
Remove 2 screws.

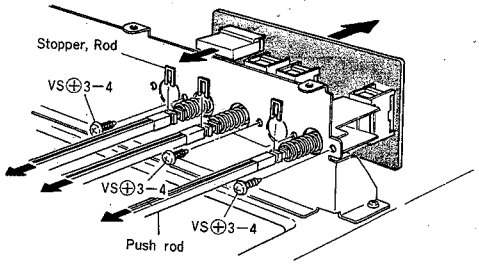


To Remove Meter Amp./Test Head Amp. Circuit Board
1) Remove 2 washers and nuts of the volume shafts.
2) Remove 4 selector switch screws.
3) Remove 3 DIN jack screws.
4) Remove 2 circuit board screws.

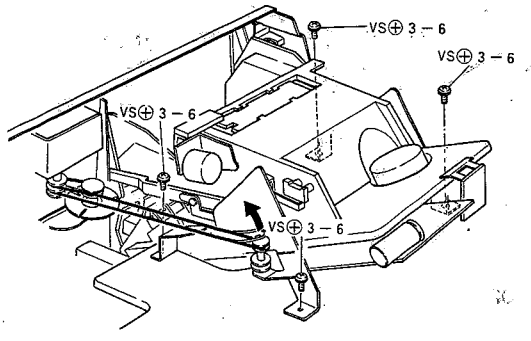
Note: When removing the DIN jack, pull the DIN holder in the direction indicated by the arrow and remove.



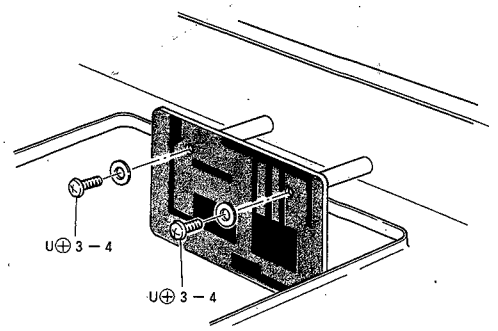
To Remove Switch Circuit Board
1) Remove 3 push rod stoppers and draw in the direction indicated by the arrows.
2) Remove 4 screws and connector, and the switch circuit board can be removed if it is drawn in the direction indicated by the arrow.



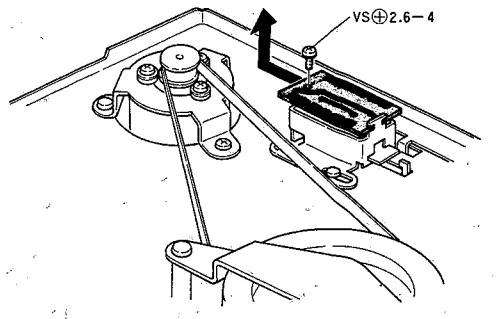
To Remove Mechanism
Remove 4 screws and counter belt.



To Remove Filter Circuit Board
Remove 2 screws.



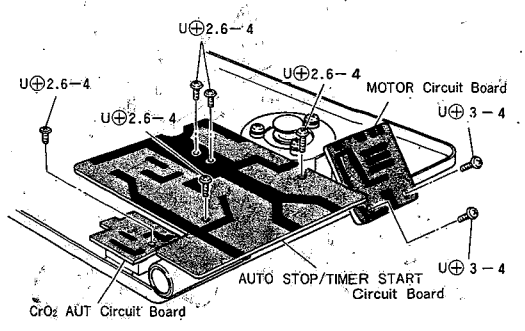
To Remove Stop Muting Circuit Board
Remove mounting screw.



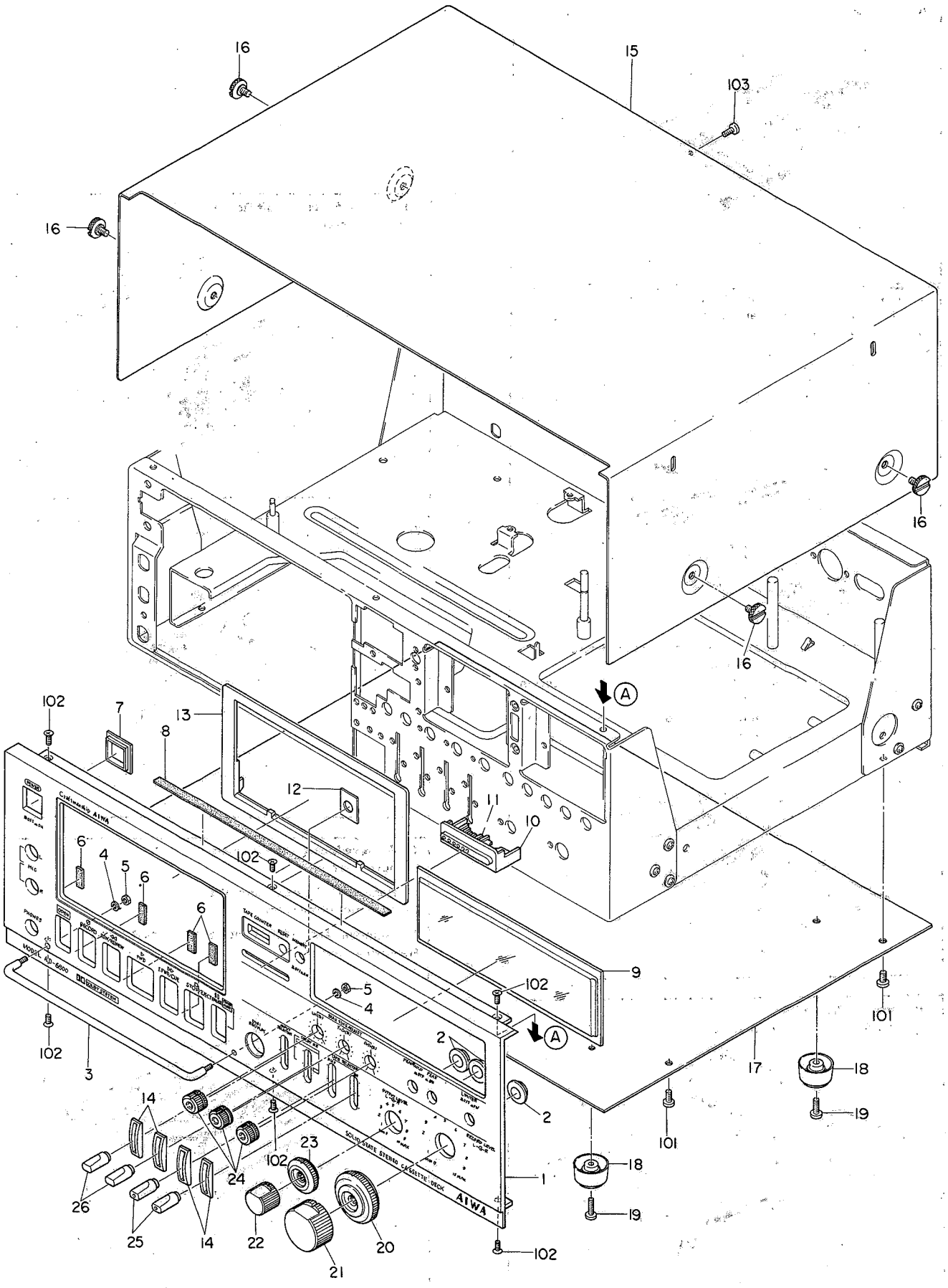
To Remove Motor Circuit Board
Remove 2 screws.

To Remove CrO_2 Auto Circuit Board
Remove mounting screws.

To Remove Auto-Stop/Timer Start Circuit Board.
Remove 4 screws.



EXPLODED VIEW-1



PARTS LIST

MECHANICAL PARTS

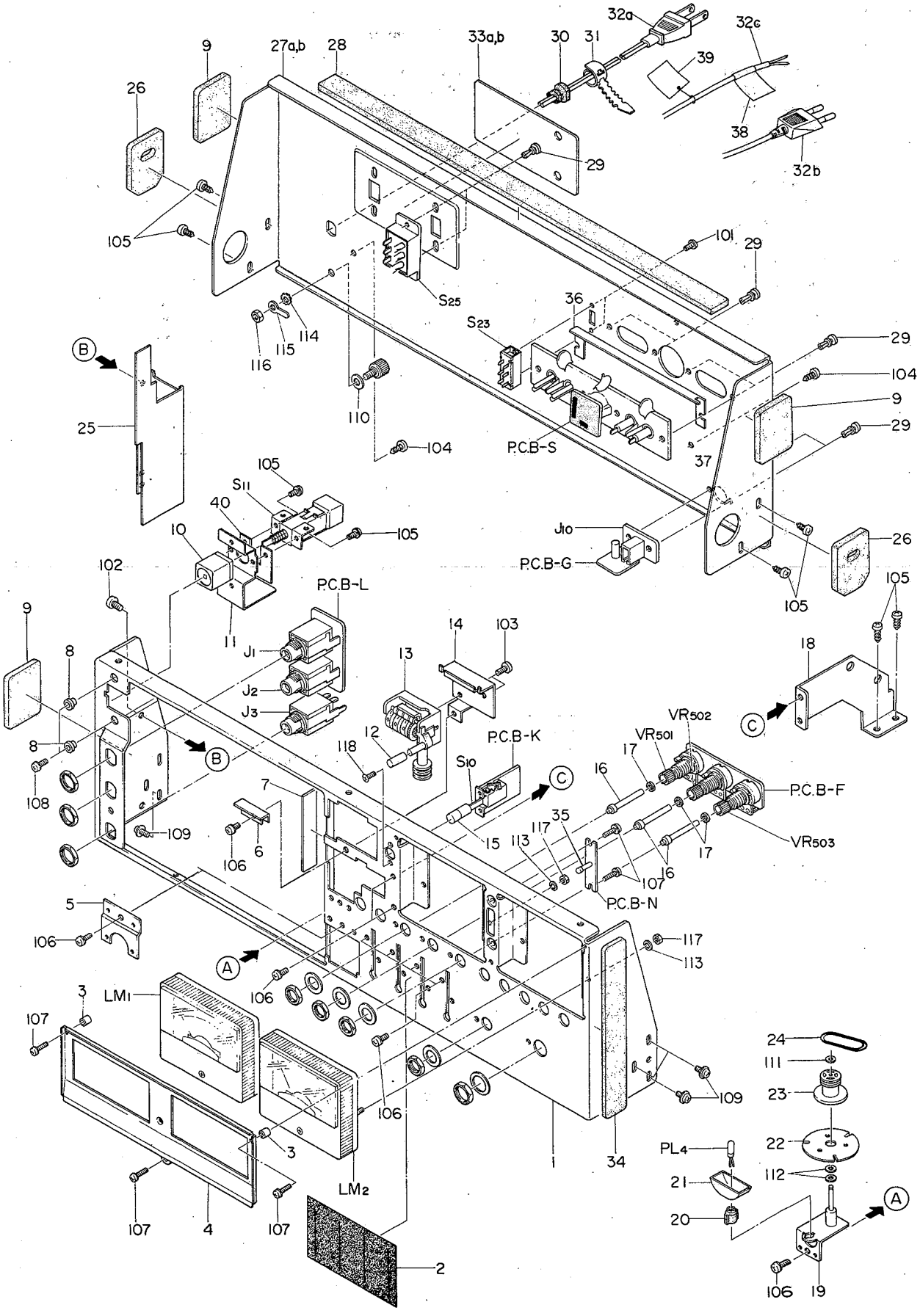
■ * mark in this parts list shows exclusive part (which is used) for only Model AD-6800.

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1~14	09-047-094-01		**Panel Assembly (H model only)**		
1~14	09-047-095-01		**Panel Assembly (EE, UK model only)**		
1-1a	82-387-032-01		Front panel (H model only)	*	1
1-1b	82-387-061-01		Front panel (EE, UK model only)	*	1
1-2	82-387-016-01		Guide B, Push switch button	*	3
1-3	82-387-022-01		Bar, Push button	*	1
1-4	82-421-306-01		SW-3		2
1-5	87-319-018-01		N-3		2
1-6	82-387-055-01		Spacer A	*	4
1-7	82-380-026-01		Guide, Power button	AD-6500	1
1-8	82-473-273-01		Spacer, Top panel	AD-6500	1
1-9	82-387-023-01		Window B, Meter	*	1
1-10	82-380-024-01		Panel, Tape running	AD-6500	1
1-11	82-380-025-01		Window, Tape running	AD-6500	1
1-12	82-380-075-01		Brind himeron, Memory button	AD-6500	1
1-13	82-387-019-01		Front panel B	*	1
1-14	82-387-071-01		Guide, Lever switch	*	4
1-15	82-387-069-01		Top panel	*	1
1-16	82-473-047-01		Screw, Top panel	AX-7500	4
1-17	82-380-004-01		Bottom lid	AD-6500	1
1-18	87-085-141-01		Leg		4
1-19	87-263-171-01		V + 4-10		4
1-20	82-387-012-01		Volume knob B, REC	*	1
1-21	82-387-053-01		Volume knob A ass'y, REC	*	1
1-22	82-387-056-01		Volume knob A ass'y, Playback	*	1
1-23	82-387-014-01		Volume knob B, Playback	*	1
1-24	82-387-018-01		Bias volume knob	*	3
1-25	82-387-046-01		Knob ass'y (Red)	*	2
1-26	82-387-029-01		Knob ass'y	*	2

Ref. No.	Part No.	Description	Q'ty
1-101	87-253-094-01	U + 3-6	6
1-102	87-233-093-01	Q + 3-5	6

Ref. No.	Part No.	Description	Q'ty
1-103	87-481-402-01	UT_2 + 3-8(Black)	1

EXPLODED VIEW—2

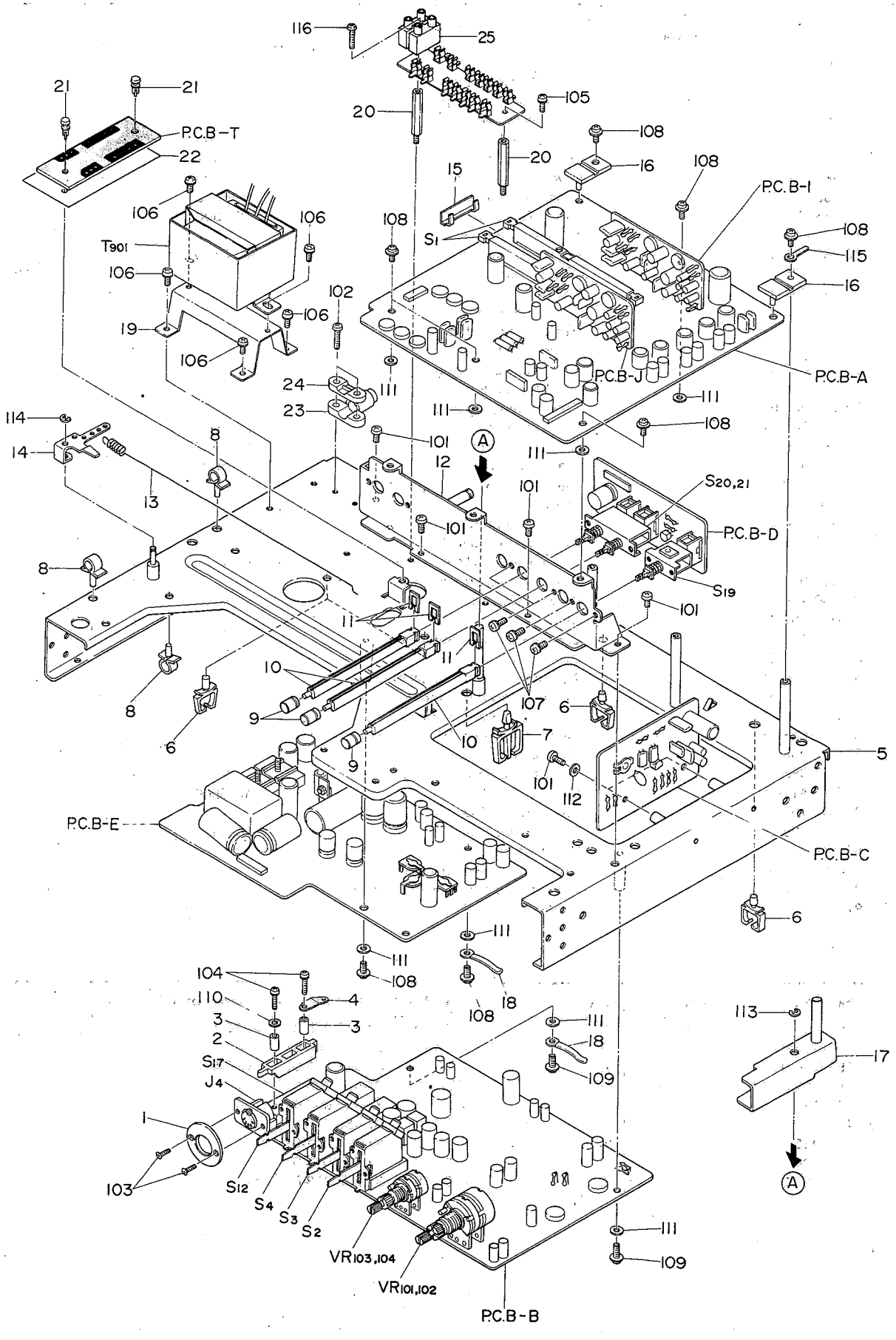


Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
2-1	82-387-206-11		Front chassis ass'y	*	1
2-2	82-387-037-01		Cover, Lever switch	*	1
2-3	82-387-025-01		Collar, Meter name plate	*	2
2-4	82-387-021-01		Name plate, Meter	*	1
2-5	82-380-355-01		Holder, DIN jack	AD-6500	1
2-6	82-380-367-01		Cover, Front chassis	AD-6500	1
2-7	82-380-375-01		Cover B, Front chassis	AD-6500	1
2-8	82-380-292-01		Collar, AC holder	AD-6500	2
2-9	82-473-247-01		Spacer B, Side panel	AX-7500	3
2-10	82-387-049-01		AC button B ass'y	*	1
2-11	82-380-298-01		Holder, AC switch	AD-6500	1
2-12	82-432-036-01		Counter button	TPR-212	1
2-13	87-040-080-01		Counter		1
2-14	82-387-215-01		Holder, Counter	*	1
2-15	82-387-051-01		Memory button B ass'y	*	1
2-16	82-387-027-01		Guide, Light	*	3
2-17	82-387-036-01		M cushion, Light guide	*	3
2-18	82-387-214-01		Auxiliary plate	*	1
2-19	82-387-207-01		Tape running holder ass'y	*	1
2-20	82-380-344-01		Lamp bushing B	AD-6500	1
2-21	82-380-280-01		Reflector mirror	AD-6500	1
2-22	82-380-372-01		Shadow plate B	AD-6500	1
2-23	82-380-282-01		Shadow pulley	AD-6500	1
2-24	82-380-440-01		Belt C, Counter	AD-6500	1
2-25	82-387-680-01		Shield plate, MIC	*	1
2-26	82-473-245-01		Spacer A, Side panel	AX-7500	2
2-27a	82-387-064-01		Rear panel (H, UK model only)	*	1
2-27b	82-387-063-01		Rear panel (EE model only)	*	1
2-28	82-380-439-01		Spacer, Rear panel	AD-6500	1
2-29	87-085-102-01		Nylon rivet		8
2-30	87-085-101-01		Cord bushing (H model only)		1
2-31	87-058-023-01		Cord binder		1
2-32a	87-034-826-01		AC power cord (H model only)		1
2-32b	87-034-835-01		AC power cord (EE model only)		1
2-32c	87-034-872-01		AC power cord (UK model only)		1
2-33a	82-387-033-01		Name plate, Spec. (H model only)	*	1
2-33b	82-387-065-01		Name plate, Spec. (EE model only)	*	1
2-33c	82-387-066-01		Name plate, Spec. (UK model only)	*	1
2-34	82-380-412-01		Cushion, Top panel	AD-6500	1
2-35	82-387-290-01		Collar, REC LED	*	1
2-36	82-386-629-01		Shield plate, Jack	AD-1250	1
2-37	82-387-273-01		Holder, Jack	*	1
2-38	87-056-008-01		Label, AC power cord (UK model only)		1
2-39	87-056-014-01		Tag, Main voltage (UK model only)		1
2-40	82-379-701-01		Insulation plate A	AD-1800	1

Ref. No.	Part No.	Description	Q'ty
2-101	87-267-035-01	V + 2-6(Black)	2
2-102	87-253-092-01	U + 3-4	2
2-103	87-253-094-01	U + 3-6	4
2-104	87-481-402-01	UT_2 + 3-8(Black)	3
2-105	87-343-095-01	UT_2 + 3-5	6
2-106	87-480-092-01	VS + 3-4	7
2-107	87-257-035-01	VS + 2-6	5
2-108	87-480-094-01	VS + 3-6	2
2-109	87-510-095-01	VTF + 3-8	6

Ref. No.	Part No.	Description	Q'ty
2-110	87-410-325-01	W4-10-1.0	1
2-111	87-081-464-01	PW1.8	1
2-112	87-081-319-01	TW2.3-8-0.2	2
2-113	87-421-306-01	SW3	4
2-114	87-433-906-01	WTIE-4	1
2-115	87-450-416-01	LB-6	1
2-116	87-391-024-01	N-4	1
2-117	87-319-018-01	N-3	5
2-118	87-233-033-01	Q + 2-4	2

EXPLODED VIEW-3



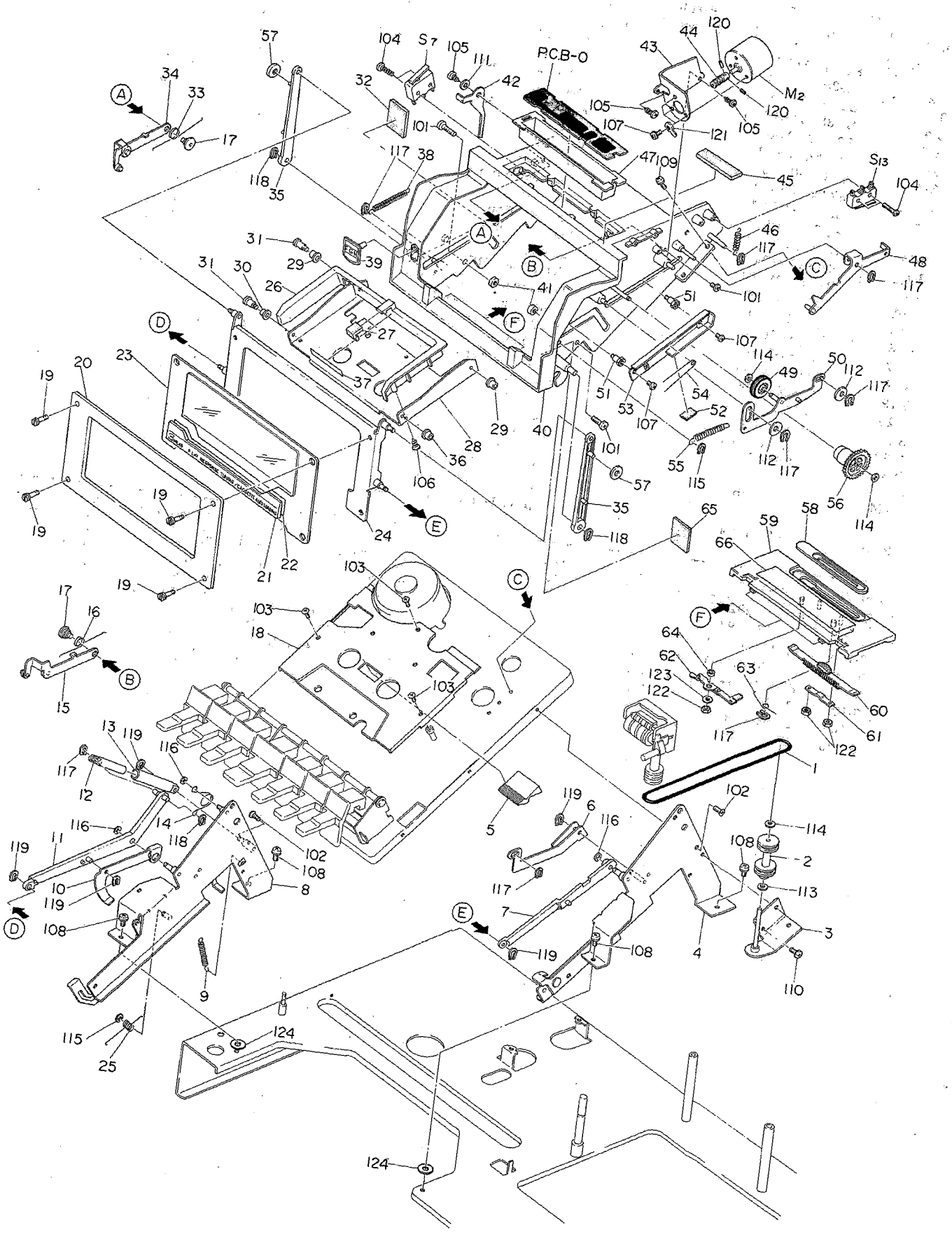
Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
3-1	82-380-073-01		Cover, DIN	AD-6500	1
3-2	82-387-244-01		DIN selector pole	*	1
3-3	82-387-245-01		Collar, DIN selector pole	*	2
3-4	82-387-248-01		Spacer, Erath	*	1
3-5	82-387-201-01		Amp. chassis ass'y	*	1
3-6	87-064-038-01		Wire clip A		5
3-7	87-064-051-01		Wire clip F		1
3-8	87-064-050-01		Wire clip E		3
3-9	82-387-017-01		Push switch button	*	3
3-10	82-387-218-01		Push rod	*	3
3-11	82-385-383-01		Stopper, Rod	AD-6300	3
3-12	82-387-217-01		Plate, Circuit holder	*	1
3-13	82-387-216-01		Spring, REC	*	1
3-14	82-374-246-01		Relay lever, REC	AD-1200	1
3-15	82-372-414-01		Pressure plate, REC switch		1
3-16	87-064-056-01		Hinge, Circuit board		2
3-17	82-387-211-01		REC lever A ass'y	*	1
3-18	87-038-039-01		Wire binder		2
3-19	82-380-447-01		Holder, Power transformer	AD-6500	1
3-20	82-387-310-01		Brass post B	*	2
3-21	87-085-102-01		Nylon rivet		2
3-22	82-387-691-01		Insulation plate	*	1
3-23	87-085-094-01		Holder A, AC power cord (EE, UK model only)		1
3-24	87-085-095-01		Holder B, AC power cord (EE, UK model only)		1
3-25	87-033-145-01		Relay Terminal (EE model only)		1

Ref. No.	Part No.	Description	Q'ty
3-101	87-253-092-01	U + 3-4	6
3-102	87-253-099-01	U + 3-15	2
3-103	87-233-035-01	Q + 2-6	2
3-104	87-480-076-01	VS + 2.6-12	2
3-105	87-480-094-01	VS + 3-6	1
3-106	87-480-169-01	VS + 4-6	6
3-107	87-480-092-01	VS + 3-4	4
3-108	87-470-093-01	VW + 3-5	9

Ref. No.	Part No.	Description	Q'ty
3-109	87-490-095-01	VWS + 3-8	2
3-110	87-410-315-01	W3-8-0.5	1
3-111	87-081-084-01	FW3-10-0.5	8
3-112	87-081-013-01	FW2.6-7.5-0.5	2
3-113	87-441-011-01	STE-4	1
3-114	87-441-006-01	STE-2.3	1
3-115	87-450-416-01	LB-6	1
3-116	87-253-102-01	U + 3-20	1

EXPLODED VIEW–4

AIWA

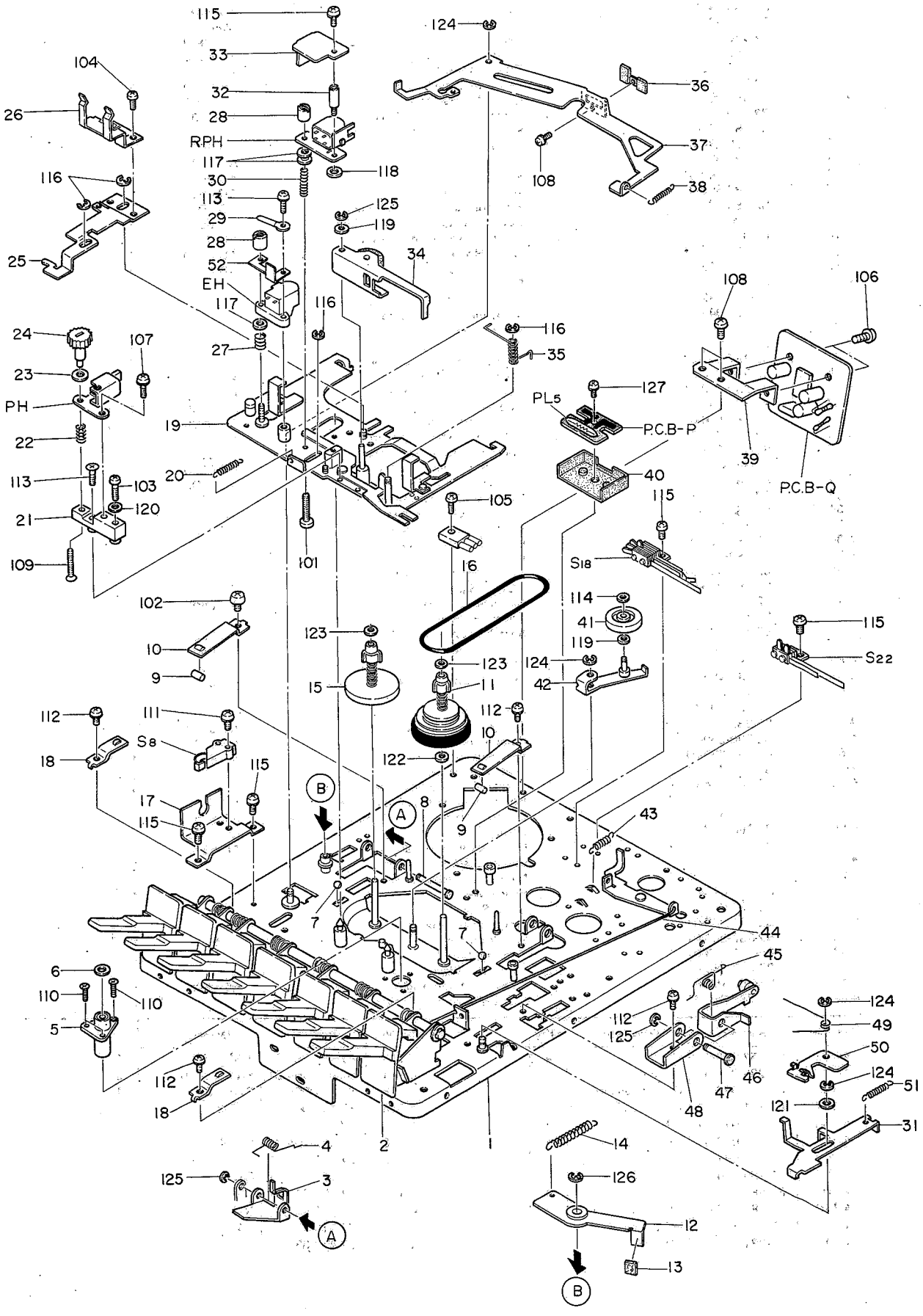


Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
4-1	82-380-441-01		Belt D, Counter	AD-6500	1
4-2	82-380-338-01		Relay pulley B	AD-6500	1
4-3	82-380-312-01		Relay holder B ass'y	AD-6500	1
4-4	82-380-223-01		Chassis holder ass'y, Right	AD-6500	1
4-5	82-380-378-01		Tape window	AD-6500	1
4-6	82-380-287-01		Lever, Cassette lid open	AD-6500	1
4-7	82-380-269-01		Lever R, Cassette lid	AD-6500	1
4-8	82-380-226-01		Chassis holder ass'y, Left	AD-6500	1
4-9	82-387-225-01		Spring, Cassette lid open lever	*	1
4-10	82-380-274-01		Relay lever E	AD-6500	1
4-11	82-380-270-01		Lever L, Cassette lid	AD-6500	1
4-12	82-380-397-01		Shaft A, Damper	AD-6500	1
4-13	82-380-398-01		Shaft B, Damper	AD-6500	1
4-14	82-380-304-01		Plate spring, Cassette lid open	AD-6500	1
4-15	82-380-210-01		Cassette holder plate ass'y, Right	AD-6500	1
4-16	82-380-362-01		Spring, Cassette holder plate	AD-6500	1
4-17	82-380-215-01		Shaft, Holder plate	AD-6500	2
4-18	82-380-065-01		Back plate B	AD-6500	1
4-19	82-387-045-01		Screw 2-6	*	4
4-20	82-387-042-01		Panel B, Cassette lid	*	1
4-21	82-387-044-01		Name plate, Cassette lid	*	1
4-22	82-387-048-01		Adhesive label	*	1
4-23	82-387-043-01		Window, Cassette	*	1
4-24	82-387-258-01		Cassette lid holder B ass'y	*	1
4-25	82-380-356-01		Spring, Relay lever	AD-6500	1
4-26	82-380-438-01		Cover, Cassette-up plate	AD-6500	1
4-27	82-380-291-01		Rubber, Cassette holder	AD-6500	1
4-28	82-380-436-01		Cassette-up plate	AD-6500	1
4-29	82-380-289-01		Collar A, Cassette-up plate	AD-6500	2
4-30	82-380-448-01		Collar B, Cassette-up plate	AD-6500	1
4-31	82-380-359-01		Shaft B, Cassette-up plate	AD-6500	2
4-32	82-380-449-01		Rubber cushion, Left	AD-6500	1
4-33	82-380-416-01		Spring B, Cassette holder plate	AD-6500	1
4-34	82-380-221-01		Cassette holder plate ass'y, Left	AD-6500	1
4-35	82-380-271-01		Lever A, Cassette lid	AD-6500	2
4-36	82-380-462-01		Collar C, Cassette-up plate	AD-6500	1
4-37	82-380-375-01		Cover B	AD-6500	1
4-38	82-380-305-01		Return spring, Cassette-up plate	AD-6500	1
4-39	82-387-035-01		FGH Badge	*	1
4-40	82-380-391-01		Cassette-up guide ass'y	AD-6500	1
4-41	82-387-263-01		Collar, Head cover	*	2
4-42	82-380-390-01		Switch pressure plate B	AD-6500	1
4-43	82-380-389-01		Holder D, Motor	AD-6500	1
4-44	82-380-361-01		Warm gear	AD-6500	1
4-45	82-380-457-01		Stopper rubber, Cassette-up plate	AD-6500	1
4-46	82-272-326-01		FR spring		1
4-47	82-387-026-01		Cover, Lamp	*	1
4-48	82-380-261-01		Switch pressure plate ass'y	AD-6500	1
4-49	82-380-250-01		Relay idler ass'y	AD-6500	1
4-50	82-380-257-01		Idler lever ass'y	AD-6500	1
4-51	82-380-358-01		Shaft A, Cassette-up plate	AD-6500	2
4-52	82-387-274-01		Spacer, Forward lever; Cassette-up	*	1
4-53	82-380-253-01		Forward lever ass'y, Cassette-up	AD-6500	1
4-54	82-380-363-01		Spring, Forward lever; Cassette-up plate	AD-6500	1
4-55	82-380-308-01		Spring, Relay idler	AD-6500	1
4-56	82-380-273-01		Gear, Cassette forward	AD-6500	1
4-57	82-387-224-01		Collar, Cassette lid lever	*	2
4-58	82-387-041-01		Name plate, Head cover	*	1
4-59	82-387-040-01		Head cover H	*	1
4-60	82-387-039-01		Rack, Slide	*	1
4-61	82-387-285-01		Stop pressure plat B	*	1
4-62	82-387-280-01		Stop lever ass'y	*	1
4-63	82-387-303-01		T spring, Stop lever	*	1
4-64	82-387-286-01		Collar, Stop lever	*	1
4-65	82-380-450-01		Rubber cushion, Right	AD-6500	1
4-66	82-387-271-01		Caution label, Head cover		1

Ref. No.	Part No.	Description	Q'ty
4-101	87-257-033-01	U + 2-4	4
4-102	87-233-094-01	Q + 3-4	4
4-103	87-239-033-01	Q + 2-4(Black)	3
4-104	87-341-037-01	UT_1 + 2-10	4
4-105	87-343-072-01	UT_2 + 2.6-5	3
4-106	87-323-034-01	QT_2 + 2-5	4
4-107	87-480-071-01	VS + 2.6-4	4
4-108	87-480-094-01	VS + 3-6	4
4-109	87-480-093-01	VS + 3-5	4
4-110	87-480-092-01	VS + 3-4	2
4-111	87-410-311-01	W2.6-7.5-0.5	1
4-112	87-081-260-01	W4-10-0.4	2

Ref. No.	Part No.	Description	Q'ty
4-113	87-081-284-01	TW2.1-5-0.3	1
4-114	87-081-464-01	PW1.8-5-0.5	3
4-115	87-441-006-01	STE-2.3	1
4-116	87-441-009-01	STE-3	3
4-117	87-442-003-01	STP-3	11
4-118	87-442-004-01	STP-4	3
4-119	87-441-008-01	STE-2.5	5
4-120	87-374-032-01	SS2-3	2
4-121	87-450-412-01	LB-2	1
4-122	87-391-006-01	N-2	3
4-123	87-410-305-01	W2-6-0.4	1
4-124	87-410-334-01	W6-1.4-0.6	2

EXPLODED VIEW–5

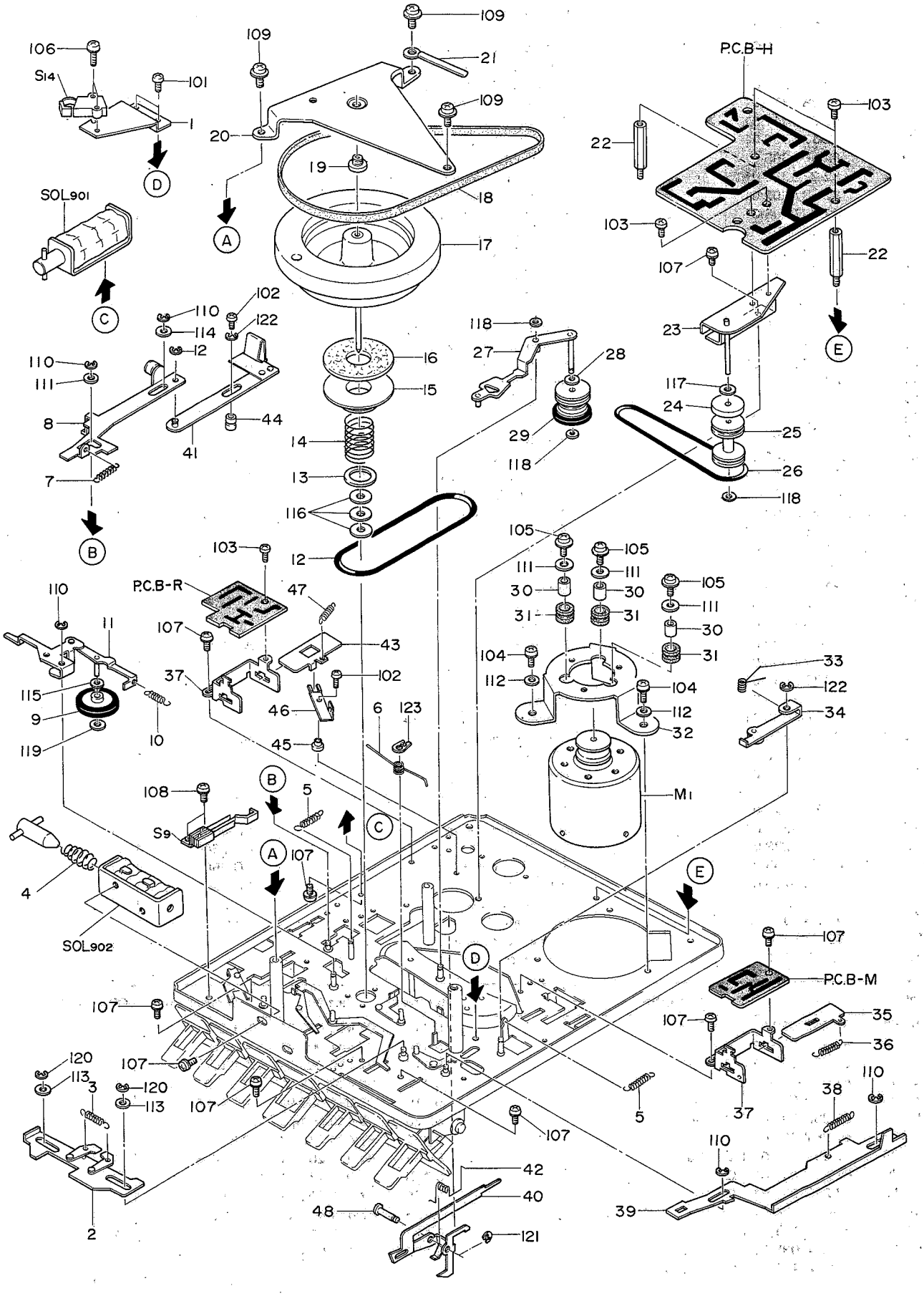


Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
5-1	82-387-287-01		Chassis ass'y	*	1
5-2	82-301-201-01		Push switch ass'y		1
5-3	82-380-351-01		Record-blocking lever B	AD-6500	1
5-4	82-371-356-01		Spring, blocking lever		1
5-5	82-370-253-01		Shaft bearing ass'y		1
5-6	82-283-351-01		Poly-slider washer		1
5-7	82-215-341-01		Steel ball 3/32		2
5-8	82-370-306-01		Shaft, blocking lever		1
5-9	82-603-305-01		Roller, 2.5φ		2
5-10	82-272-350-01		Plate spring, Head base holder		2
5-11	82-387-202-01		Take-up reel platform ass'y	*	1
5-12	82-387-296-01		Back tension lever ass'y	*	1
5-13	82-387-299-01		Felt, Back tension	*	1
5-14	82-387-300-01		Spring E, Back tension	*	1
5-15	82-384-206-01		Rewind reel platform ass'y		1
5-16	82-463-219-01		Belt, Counter	TPR-900	1
5-17	82-370-336-01		Holder, Switch		1
5-18	82-387-305-01		Plate spring B, Actuating chassis	*	2
5-19	82-387-227-01		Actuating chassis H ass'y	*	1
5-20	82-380-444-01		Spring B, Actuating lever	AD-6500	1
5-21	82-387-233-01		Base, Head	*	1
5-22	82-387-242-01		Spring, Head adjuster	*	1
5-23	82-387-292-01		G cushion	*	1
5-24	82-387-256-01		Gear ass'y	*	1
5-25	82-380-442-01		Actuating lever B	AD-6500	1
5-26	82-380-443-01		Plate spring B, Cassette holder B	AD-6500	1
5-27	82-387-277-01		Spring C, Erase head	*	1
5-28	82-380-403-01		Spring, Head adjuster	AD-6500	2
5-29	82-365-280-01		Wire holder		1
5-30	82-380-402-01		Spring, Head adjusting	AD-6500	1
5-31	82-370-291-01		Pause lever ass'y		1
5-32	82-387-249-01		Screw, Head cover	*	1
5-33	82-387-278-01		Head cover C	*	1
5-34	82-387-235-01		Pinch lever ass'y	*	1
5-35	82-374-278-01		Spring, Pinch lever	AD-1200	1
5-36	82-370-408-01		Brake		1
5-37	82-370-430-01		Brake arm		1
5-38	82-370-419-01		Spring, Brake arm		1
5-39	82-387-668-01		Holder, Motor circuit board	*	1
5-40	82-380-379-01		Cushion, Tape lamp	AD-6500	1
5-41	82-272-270-01		FF idler		1
5-42	82-272-291-01		Rewind lever ass'y		1
5-43	82-380-407-01		Spring, Switch pressure plate	AD-6500	1
5-44	82-370-321-01		Bar, Relay		1
5-45	82-380-394-01		Spring, Cassette-up lever	AD-6500	1
5-46	82-380-238-01		Eject lever ass'y	AD-6500	1
5-47	82-380-296-01		Shaft, Eject lever B	AD-6500	1
5-48	82-380-286-01		Eject lever B	AD-6500	1
5-49	82-370-264-01		Plate spring, Lock plate		1
5-50	82-380-373-01		Lock plate B	Ad-6500	1
5-51	82-370-314-01		Spring, Pause lever		1
5-52	82-387-302-01		Stop pressure plate C	*	1

Ref. No.	Part No.	Description	Q'ty
5-101	87-263-039-01	V + 2-14	1
5-102	87-263-070-01	V + 2.6-3	2
5-103	87-257-038-01	V + 2-12	1
5-104	87-263-031-01	V + 2-2	2
5-105	87-253-033-01	U + 2-4	1
5-106	87-253-092-01	U + 3-4	2
5-107	87-257-033-01	U + 2-4	1
5-108	87-253-071-01	U + 2.6-4	2
5-109	87-233-038-01	Q + 2-12	1
5-110	87-233-033-01	Q + 2-4	3
5-111	87-480-036-01	VS + 2-8	2
5-112	87-480-071-01	VS + 2.6-4	5
5-113	87-257-035-01	VS + 2-6	2
5-114	87-081-464-01	PW1.8-5-0.5	1

Ref. No.	Part No.	Description	Q'ty
5-115	87-480-033-01	VS + 2-4	8
5-116	87-441-006-01	STE-2.3	4
5-117	87-410-305-01	W2-6-0.4	3
5-118	82-410-312-01	W3-6-0.3	1
5-119	87-081-036-01	TW2-5-0.5	2
5-120	87-410-304-01	W2-4.3-0.4	1
5-121	87-410-315-01	W3-8-0.2	1
5-122	82-215-207-01	TW1.6-3.8-0.2	1
5-123	87-081-473-01	PW1.3	2
5-124	87-441-005-01	STE-2	4
5-125	87-441-003-01	STE-1.5	3
5-126	87-441-011-01	STE-4	1
5-127	87-480-073-01	VS + 2.6-6	1

EXPLODED VIEW–6



Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
6-1	82-380-348-01		Holder, Rewind switch	AD-6500	1
6-2	82-387-304-01		Main drive lever ass'y	*	1
6-3	82-272-326-01		FR spring		1
6-4	82-370-417-01		Spring, Plunger		1
6-5	82-380-459-01		Spring E, Actuating chassis	AD-6500	2
6-6	82-272-327-01		Shift spring		1
6-7	82-374-273-01		Spring, Stop lever	AD-1200	1
6-8	82-380-335-01		Stop lever C ass'y	AD-6500	1
6-9	82-272-372-01		Play idler ass'y		1
6-10	82-370-383-01		Spring, Play idler		1
6-11	82-370-391-01		Idler lever ass'y		1
6-12	82-380-399-01		FR belt B	AD-6500	1
6-13	82-374-285-01		Spring stop washer	AD-1200	1
6-14	82-380-395-01		Spring, Fly wheel	AD-6500	1
6-15	82-387-308-01		Flywheel pulley ass'y	*	1
6-16	82-387-254-01		Felt A, Flywheel	*	1
6-17	82-387-270-01		Flywheel C ass'y	*	1
6-18	82-387-262-01		Main belt B	*	1
6-19	82-272-335-01		Screw for thrust		1
6-20	82-387-279-01		Bearing plate, Flywheel	*	1
6-21	87-038-039-01		Wire dinder		1
6-22	82-387-219-01		Brass post A, Chassis	*	2
6-23	82-380-246-01		Relay holder ass'y	AD-6500	1
6-24	82-379-617-01		Ring magnet	AD-1800	1
6-25	82-380-285-01		Relay pulley	AD-6500	1
6-26	82-380-393-01		Belt, Relay	AD-6500	1
6-27	82-380-409-01		FR lever ass'y	AD-6500	1
6-28	87-081-464-01		PW 1.8-5-0.5		2
6-29	82-380-352-01		FR pulley ass'y	AD-6500	1
6-30	82-370-423-01		Collar, Motor		3
6-31	87-087-027-01		Rubber cushion		3
6-32	82-370-378-01		Holder, Motor		1
6-33	82-370-313-01		Spring, REC lock lever		1
6-34	82-370-347-01		REC lock lever ass'y		1
6-35	82-374-249-01		Switch auxiliary plate B	AD-1200	1
6-36	82-374-279-01		Return spring D	AD-1200	1
6-37	82-374-248-01		Switch holder C	AD-1200	2
6-38	82-272-424-01		Spring, REC lever		1
6-39	82-380-413-01		Lever, REC	AD-6500	1
6-40	82-380-421-01		CrO_2 lever ass'y	AD-6500	1
6-41	82-380-425-01		Joint lever ass'y	AD-6500	1
6-42	82-380-429-01		Spring, CrO_2 lever	AD-6500	1
6-43	82-380-431-01		Switch auxiliary plate C	AD-6500	1
6-44	82-380-432-01		Shaft, Joint lever	AD-6500	1
6-45	82-380-433-01		Shaft, CrO_2 switch lever	AD-6500	1
6-46	82-380-434-01		Lever, CrO_2 switch	AD-6500	1
6-47	82-380-435-01		Spring, Auxiliary plate C	AD-6500	1
6-48	82-370-305-01		Spindle shaft		1

Ref. No.	Part No.	Description	Q'ty
6-101	87-263-031-01	V + 2-2	2
6-102	87-263-035-01	V + 2-6	2
6-103	87-253-071-01	U + 2.6-4	5
6-104	87-480-092-01	VS + 3-4	3
6-105	87-480-074-01	VS + 2.6-8	3
6-106	87-480-036-01	VS + 2-8	2
6-107	87-480-071-01	VS + 2.6-4	14
6-108	87-480-033-01	VS + 2-4	2
6-109	87-490-095-01	VWS + 3-8	3
6-110	87-441-006-01	STE-2.3	5
6-111	87-410-315-01	W3-8-0.5	5
6-112	87-410-316-01	W3-8-0.8	3

Ref. No.	Part No.	Description	Q'ty
6-113	87-410-323-01	W4-8-0.5	2
6-114	87-410-317-01	W3-6-0.5	1
6-115	87-081-036-01	TW2-5-0.5	2
6-116	87-081-319-01	TW2.3-8-0.2	3
6-117	87-081-284-01	TW.21-5-0.3	1
6-118	87-081-464-01	PW1.8-5-0.5	3
6-119	87-081-544-01	Poly-slider washer	1
6-120	87-441-010-01	STE-3.2	2
6-121	87-441-005-01	STE-2	3
6-122	87-441-006-01	STE-3	1
6-123	87-442-003-01	STP-3	1

HARDWARE NOMENCLATURE

V: Pan head screw

U: Binding head screw

Q: Flat countersunk head screw

UT1: Binding head tapping screw

UT2: Binding head tapping screw

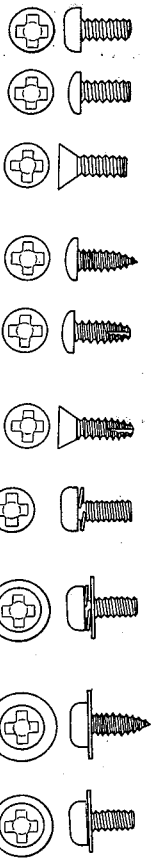
QT2: Flat countersunk head tapping screw

VS: Pan head screw with spring washer

VWS: Pan head tapping screw with spring washer and washer

VTF: Flange and Pan head tapping screw

VW: Pan head tapping screw



SS: Set screw

STP: Powerful stop ring

STE: E ring

W: Washer

TW: Tefron washer

FW: Fiber washer

PW: Poly-slider washer

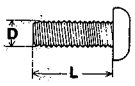
SW: Spring washer

WTIE: Crown washer

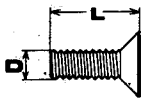
N: Nut

LB: Lug terminal plate

Example:



V + 3 – 6
- Length in mm
- Diameter in mm
- Type of Slot
- Type of Head



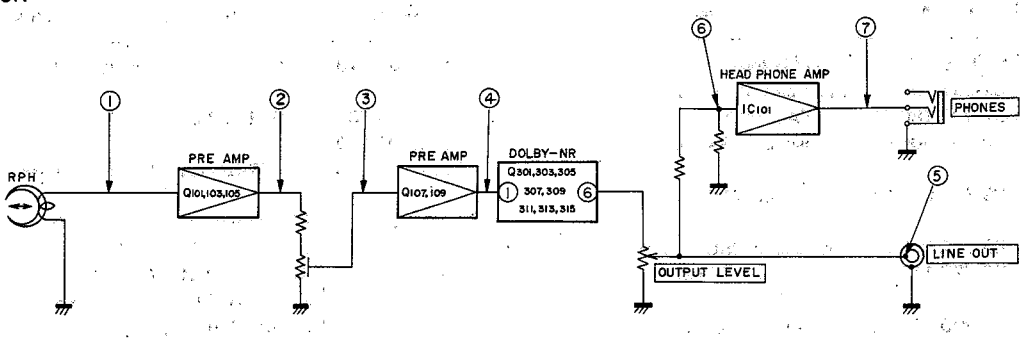
Q + 3 – 6
- Length in mm
- Diameter in mm
- Type of Slot
- Type of Head

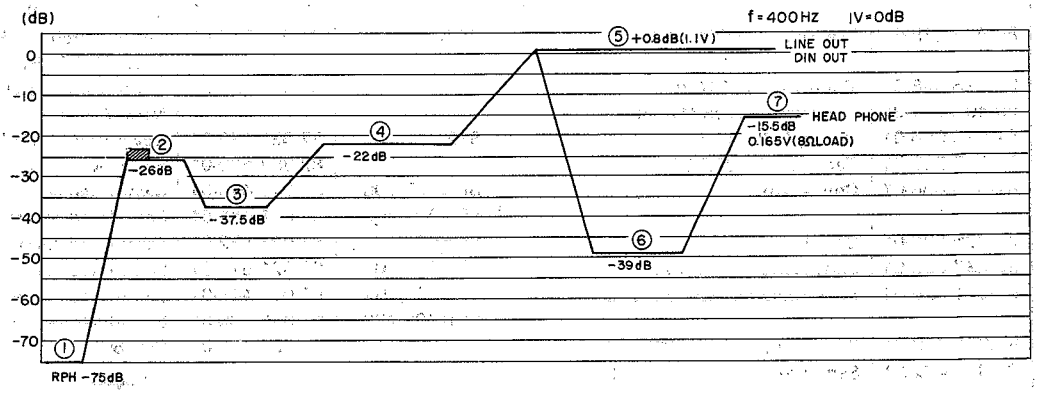
ACCESSORIES/PACKAGE

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1	82-387-856-01		Printed indiv., Packing	*	1
2	82-380-857-01		Cushion L, Printed indiv.	AD-6500	1
3	82-380-858-01		Cushion R, Printed indiv.	AD-6500	1
4	87-056-500-01		Curl stopper		2
5	87-051-146-01		Poly-vinyl sack (for case)		1
6	87-051-131-01		Poly-vinyl sack (for AC cord)		1
7	87-058-024-01		Head cleaning pole		1
8	86-944-613-01		Connection cord, CW-129K (H model only)		2
9	87-925-002-01		Connection cord, CW-115K (EE, UK model only)		1
10	80-291-645-01		Tape cassette, DMC-130A		1
11	87-056-009-01		Distributors list		1
12	87-056-512-01		Label, Cassette guide		2
13	87-056-571-01		Label, Cassette lid		1
14	87-051-171-01		Poly-vinyl sack (for instruction)		1
15a	82-387-912-01		Instructions booklet (H model only)	*	1
15b	82-387-915-01		Instructions booklet (EE model only)	*	1
15c	82-387-914-01		Instructions booklet (UK model only)	*	1

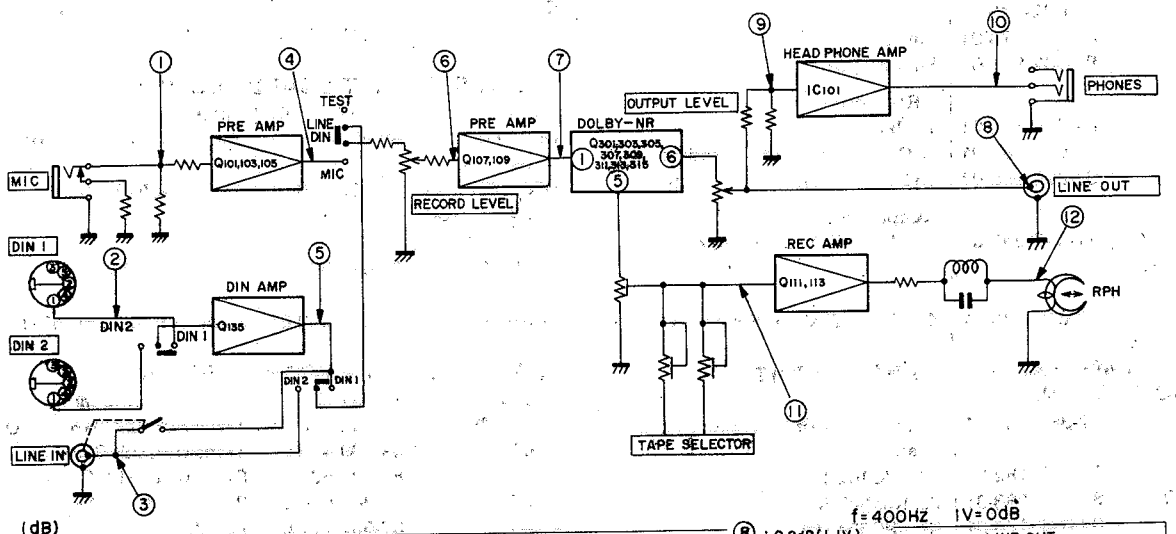
LEVEL DIAGRAM

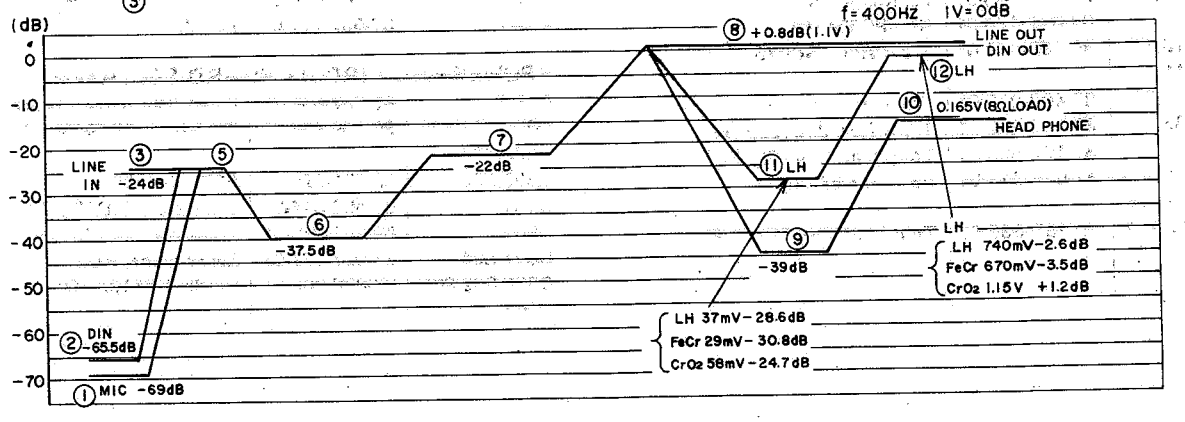
● PLAYBACK





● RECORD

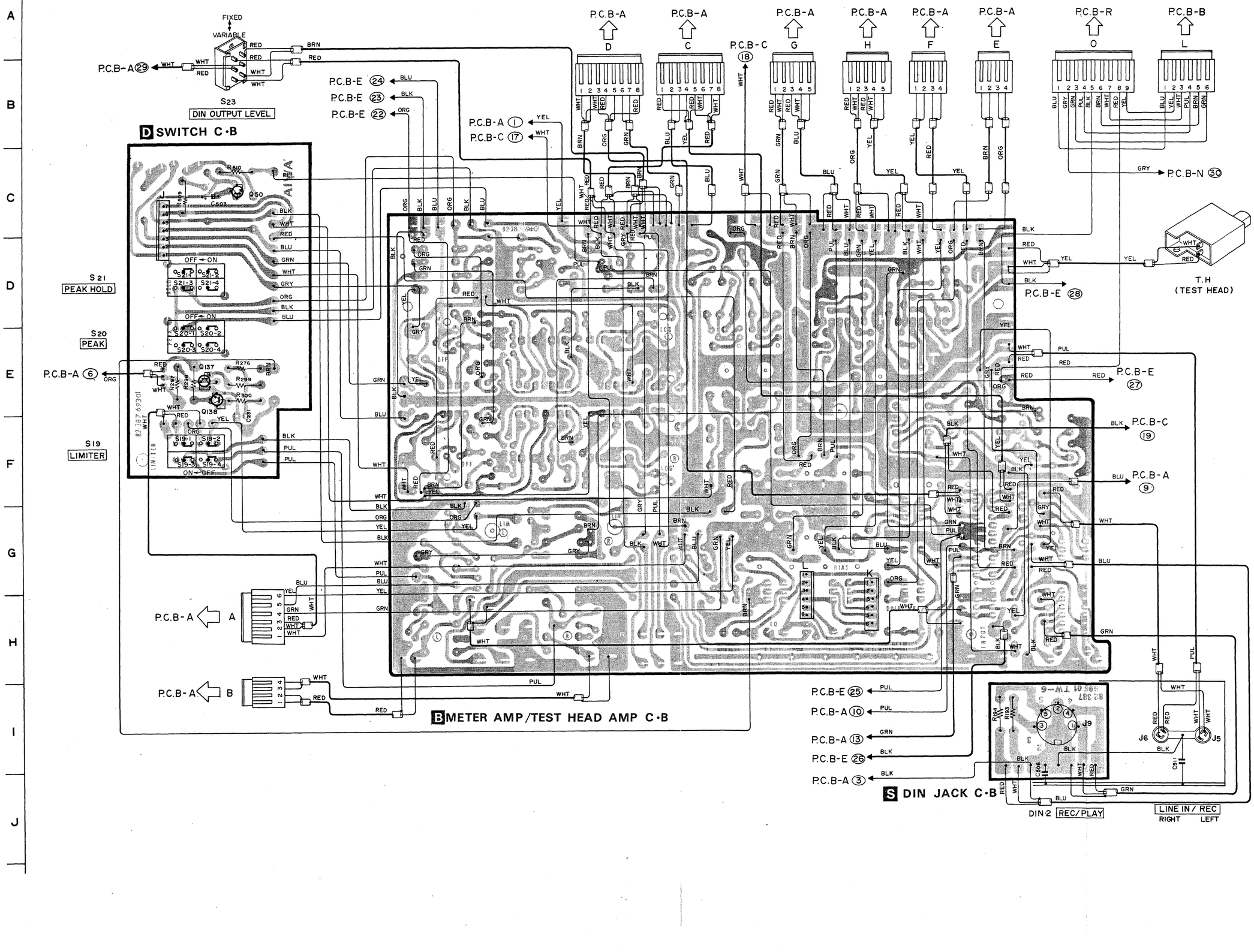




ELECTRICAL MAIN PARTS

Symbol No.	Part No.	Description
≪MAIN CIRCUIT BOARD SECTION≫		
PCB-A	82-387-708-01	Main circuit board
IC101,102	87-027-180-01	IC, TA7140AP
Q101,102,109 110	89-107-505-01	Transistor, 2SA750 (E)
Q103,104,107 108	89-314-005-01	Transistor, 2SC1400 (E)
Q105,106	89-312-222-01	Transistor, 2SC1222 (E)
Q111,112,113 114	87-027-111-01	Transistor, 2SC828A (R)
Q115,116,123 124,125,126 127,128,129 130,131,132 914	89-309-456-01	Transistor, 2SC945L (P)
Q133,134,139 140	89-402-275-01	Transistor, 2SD227 (V)
Q502	89-316-348-01	Transistor, 2SC1634 (8)
Q904	89-405-711-21	Transistor, 2SD571L (K)
D101,102	87-026-066-01	Diode, M8513A (O)
D921	87-027-223-01	Zener diode, 05Z-24 (L)
L107,108,109 110	82-385-634-01	Coil, 4.7mH
L111,112	82-385-636-01	Coil, 6.8mH
S1	82-387-605-01	Slide switch (REC/PB)
SFR101,102 103,104	87-021-429-01	Semi-fixed resistor, 50kΩ-B
SFR107,108	87-021-439-01	Semi-fixed resistor, 33kΩ-B
SFR109,110 111,112	87-021-422-01	Semi-fixed resistor, 22kΩ-B
PIN-B,E,F	87-032-774-01	Pin, 4P
PIN-G,H,I	87-032-775-01	Pin, 5P
PIN-A	87-032-776-01	Pin, 6P
PIN-C,D	87-032-778-01	Pin, 8P
	87-032-850-01	Pin ass'y, 6P
		<Resistors>
R145,146	82-379-675-01	7.32kΩ 1/4W
R508	87-029-380-01	33Ω 1/4W Fuse resistor
R905	87-029-058-01	180Ω 1/4W Fuse resistor
		<Capacitors>
C129,130,141 142,159,160 161,162	87-015-242-01	2.2μF 50V LL Electrolytic
C113,114	87-015-246-01	4.7μF 25V LL Electrolytic
≪METER AMP/TEST HEAD AMP CIRCUIT BOARD SECTION≫		
PCB-B	82-387-694-01	Meter amp/Test head amp circuit board
IC601,602	87-027-182-01	IC, μPC1023 (H)
IC701,703	87-027-183-01	IC, NJM4558
IC702	87-027-184-01	IC, μPC324 (C)
Q117,118,121 122,711	89-309-456-01	Transistor, 2SC945L (P)
Q119,120,709	89-402-275-01	Transistor, 2SD227 (V)
Q135,136	89-312-222-01	Transistor, 2SC1222 (E)
Q701,702	89-107-505-01	Transistor, 2SA750 (E)
Q703,704,705 706,707,708	87-027-217-01	FET, 2SK68 (M, J)
Q710,712,713	89-107-335-61	Transistor, 2SA733 (R·P)

Symbol No.	Part No.	Description
D103,104,113 114	87-026-066-01	Diode, M8513A (O)
D105,106,107 108,109,110	88-052-188-01	Diode, 1S188(FM)
D111,112,115 116	87-027-097-01	Diode, 1S1555
L101,102	82-938-640-01	Coil, 10mH
L103,104	82-372-625-11	Coil, 36mH
L105,106	82-371-622-01	Coil, 23mH
L601	82-371-644-01	Coil, 22mH
VR101,102	82-387-619-01	Volume, 20kΩ-A (RECORD LEVEL)
VR103,104	82-387-613-01	Volume, 10kΩ-A (OUT PUT LEVEL)
J4	82-301-610-01	DIN socket (DIN-1)
S2,3	87-031-387-01	Lever switch (TAPE SELECTOR, EQ, BIAS)
S4	87-031-388-01	Lever switch (DOLBY-NR, MPX FILTER)
S12	87-031-389-01	Lever switch (IN PUT SELECTOR)
S17	82-387-620-01	Slide switch (DIN SWITCH)
SFR105,106	87-021-446-01	Semi-fixed resistor, 100kΩ-B
SFR201,202	87-021-445-01	Semi-fixed resistor, 10kΩ-B
SFR601	87-021-432-01	Semi-fixed resistor, 50kΩ-B
SFR701,702	87-021-512-01	Semi-fixed resistor, 2kΩ-B
SFR703,704	87-021-441-01	Semi-fixed resistor, 470kΩ-B
SFR705,706	87-021-366-01	Semi-fixed resistor, 10kΩ-B
PIN-K,L	87-032-776-01	Pin, 6P
		<Resistor>
R254	87-025-099-01	82Ω 1/4W Fuse resistor
		<Capacitors>
C707,708	87-015-260-01	0.22μF 35V Tantalun
C614	87-015-261-01	0.33μF 35V Tantalun
≪FILTER CIRCUIT BOARD SECTION≫		
PCB-C	82-387-695-01	Filter circuit board
Q601,602,603 604,605	89-309-456-01	Transistor, 2SC945L (P)
D701,702,703 704,705,706 707,708,713	87-026-066-01	Diode, M8513A (O)
D709,710,711 712	87-027-097-01	Diode, 1S1555
SFR602	87-021-432-01	Semi-fixed resistor, 50kΩ-B
≪SWITCH CIRCUIT BOARD SECTION≫		
PCB-D	82-387-693-01	Switch circuit board
Q137,138	89-309-456-51	Transistor, 2SC945L (R,Q)
Q501	89-309-456-01	Transistor, 2SC945L (P)
S19	82-387-635-01	Push switch (LIMITER)
S20,21	82-387-636-01	Push switch (PEAK, HOLD)
PIN-J	87-032-777-01	Pin, 7P
≪POWER/OSC CIRCUIT BOARD SECTION≫		
PCB-E	82-387-630-21	Power/OSC circuit board
Q801,802,804 805,902	89-309-456-01	Transistor, 2SC945L (P)
Q803,806	82-371-625-01	FET, 2SK30D
Q901	89-402-344-01	Transistor, 2SD234 (Y)
Q903	89-107-335-61	Transistor, 2SA733 (K, P)
D801,804	87-027-171-01	Zener diode, RD2.7 (E)
D802,803,805 806	87-026-066-01	Diode, M8513A (O)


FIXED
VARIABLE
S23
DIN OUTPUT LEVEL
P.C.B-A (29)
P.C.B-E (24)
P.C.B-E (23)
P.C.B-E (22)
P.C.B-A (1)
P.C.B-C (17)
P.C.B-C (18)
P.C.B-A D
P.C.B-A C
P.C.B-A G
P.C.B-A H
P.C.B-A F
P.C.B-A E
P.C.B-R O
P.C.B-B L
P.C.B-N (30)
T.H
(TEST HEAD)
D SWITCH C·B
S21
PEAK HOLD
S20
PEAK
S19
LIMITER
P.C.B-A (6)
P.C.B-A A
P.C.B-A B
P.C.B-E (28)
P.C.B-E (27)
P.C.B-C (19)
P.C.B-A (9)
P.C.B-E (25)
P.C.B-A (10)
P.C.B-A (13)
P.C.B-E (26)
P.C.B-A (3)
B METER AMP/TEST HEAD AMP C·B
S DIN JACK C·B
DIN-2
REC/PLAY
LINE IN/REC
RIGHT
LEFT

MATER-AMP/TEST HEAD AMP CIRCUIT BOARD DOLBY-NR CIRCUIT BOARD

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

18. Peak Meter OVU Adjustment

Settings: PEAK HOLD button: OFF
PEAK switch: ON
All other settings are the same as for the VU Meter Indication Adjustment under 5.
Method: With the model set to the recording mode, adjust the RECORD LEVEL potentiometers so that the LINE OUT output becomes 0.775V.
Now adjust the peak meter indication to OVU.
L-ch: SFR701, R-ch: SFR702
Rating: OVU±0.3dB

5. VU Meter Indication Adjustment

Settings: OUTPUT LEVEL control: MAX.
DOLBY-NR switch: OFF
Input signal: 400 Hz OVU +10dB
Method: With the model set to the recording mode, adjust the RECORD LEVEL potentiometers so that the LINE OUT output becomes 1.1V. Now adjust the VU meter indication to OVU ±3dB.
L-ch: SFR201 R-ch: SFR202
Rating: OVU +3 ±0.3dB (■ mark) with 1.1V LINE OUT output, OVU ±0.5dB with

28. Dolby-Nr Gain/Law Adjustment

Settings: DOLBY-NR switch: OFF
Input: TP5, 6 (Terminal 1)
Output: TP7, 8 (Terminal 6)
Input signal: 5 kHz
Keep test point TP9 and 10 (Q309, 310 gates) earthed.
Method: Bofore adjustment, turn low adjustment resistors SFR301 and 302 right round, in the direction indicated by the arrows. With the model set to the playback mode, apply a 5 kHz signal from terminal 1, and adjust the input signal for a value of 84 mV at terminal 6.
Adjust the gain resistors so that the output is scaled down 10dB when the DOLBY-NR switch is set to ON.
L-ch: SFR303, R-ch: SFR304
Next, open gates Q309 and 310 and adjust low resistors so that the output is increased 2dB.
L-ch: SFR301, R-ch: SFR302

19. Peak Meter Log.Amp. Adjustment

Settings: OUTPUT LEVEL control: MAX.
DOLBY-NR switch: OFF
PEAK HOLD button: OFF
PEAK switch: ON
Input signal: 400 Hz OVU-30dB
Method: With the model set to the recording mode, adjust so that the peak meter pointer indicates −30VU.
L-ch: SFR703,
R-ch: SFR704

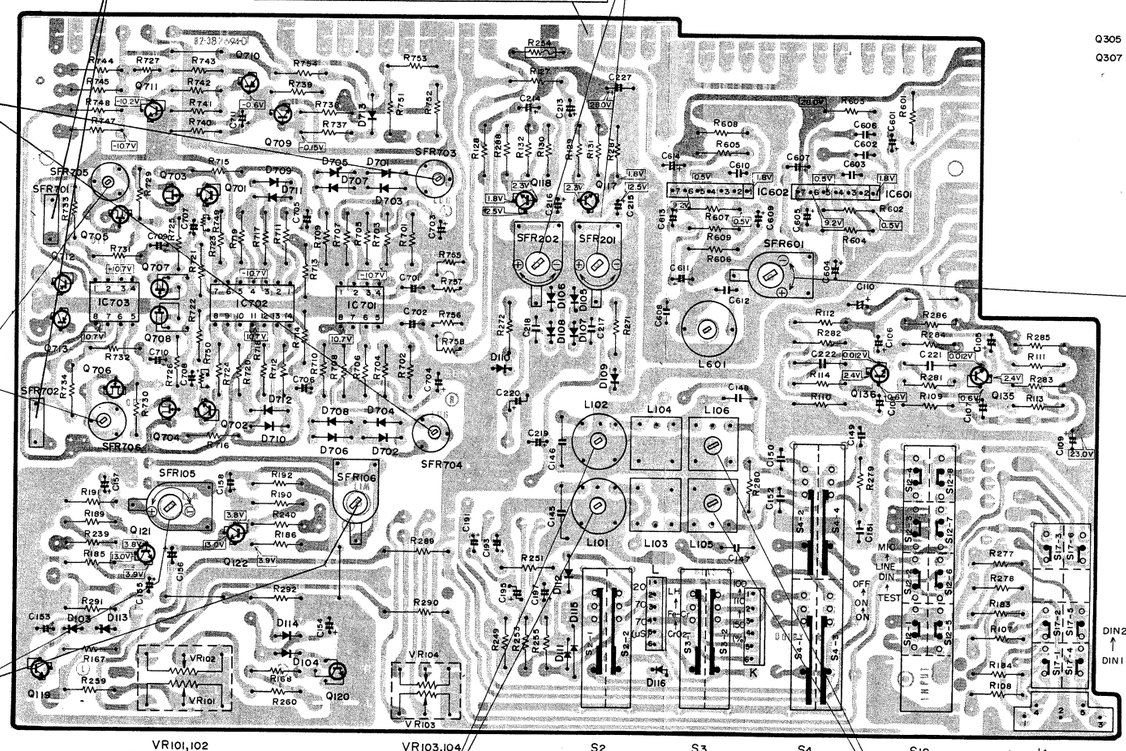
17. Peak Meter Offest Adjustment

Seetings: OUTPUT LEVEL control: MIN.
PEAK HOLD button: OFF
Method: With the model set to the playback mode, adjust using the PEAK switch ON/OFF so that the peak meter pointer deflections do not vary.
L-ch: SFR705,
R-ch: SFR706

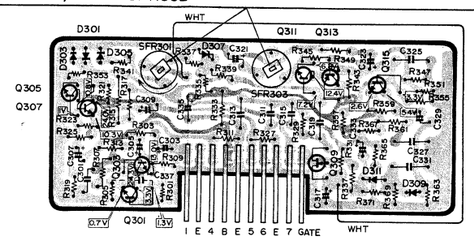
20. Limiter Sensitivity Adjustment

Settings: OUTPUT LEVEL control: MAX.
DOLBY-NR switch: OFF
Input signal: 400 Hz OVU +10dB
Method: With the model set to the recording mode, adjust the RECORD LEVEL potentiometers so that the LINE OUT output becomes 0.775V.
Next, set the limiter switch to ON, and then increase the input signal by 10dB.
Now adjust the LINE OUT output to 1V.
L-ch: SFR105,
R-ch: SFR106
Rating: Input signal: 400 Hz OVU +10dB
LINE OUT output: OVU +3dB with limiter at ON.

TP-3 Test Head Amp. Bias Trap Test Point



B METER AMP/TEST HEAD AMP C·B



I DOLBY-NR C·B

24. 400Hz Meter Indication Adjustment

Settings: INPUT SELECTOR switch: TEST
TAPE SELECTOR switch: Fe-Cr
Test tape: CS-30
BIAS FINE control: Center
*Record 400 Hz/8 kHz OVU −20dB signals and then adjust after checking that the difference in the output level is 0±0.5dB.
Method: With the model set to the recording mode, adjust SFR601 so that the left channel meter indication (400 Hz output level) is set to OVU.

23. Monitor Amp. Bias Trap Adjustment

Settings: INPUT SELECTOR switch: TEST
Test point: TP-3
Set the model to the recording mode and then press the PAUSE operating key.
Method: Adjust L601 to reduce the bias leakage to the test point to the minimum.

26. Dolby-Nr Bias Trap Adjustment

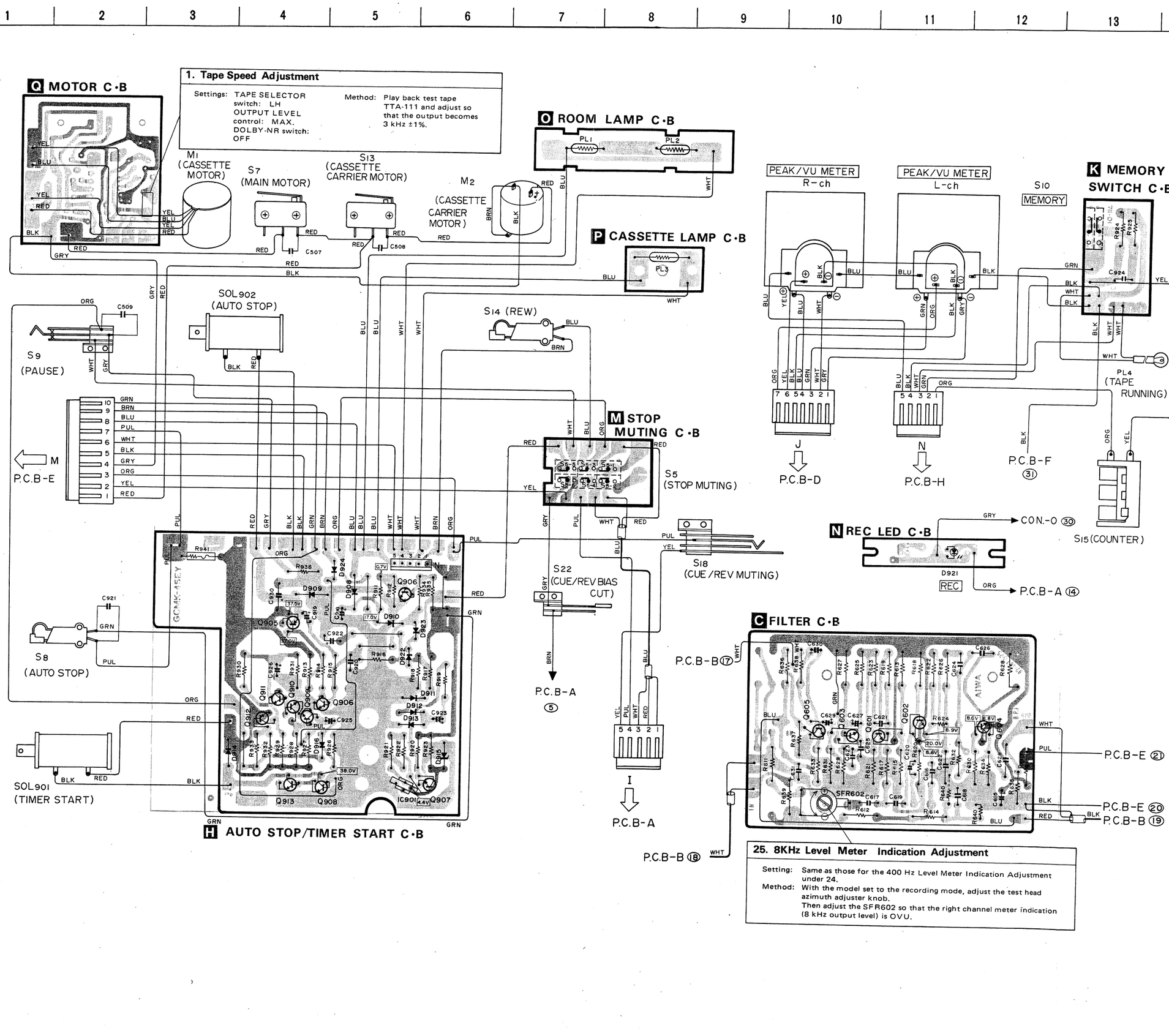
Settings: INPUT SELECTOR switch: MIC
RECORD LEVEL control: MAX.
OUTPUT LEVEL control: MAX.
DOLBY-NR switch: OFF
Method: With the model in the recording mode, adjust so that the bias to the LINE OUT is reduced to the minimum.
L-ch: L101, R-ch: L102

27. 19KHz MPX Filter Adjustment

Settings: RECORD LEVEL control: MAX.
OUTPUT LEVEL control: MAX.
DOLBY-NR switch: ON (MPX FILTER: ON)
Input signal: 19 kHz OVU
Method: With the model set to the recording mode, adjust so the that the LINE OUT output is reduced to the minimum.
L-ch: L105, R-ch: L106
Rating: A 30dB drop with the MPX FILTER ON/OFF.

NOTES:

1. ■ B(+) pattern, ■ B(−) pattern, ■ other patterns.
2. Voltage value is reference value measured with a tester (50 k-ohms/V, DC) with silent recording.
( ) is value during recording.
3. The adjustments can be divided in the following groups. They can be performed in any order but be sure to keep to the numerical order of adjustments within the groups:
   - Playback adjustments (1)~(4).
   - Recording adjustments (5)~(8).
   - Rec./pb. adjustments (9)~(16).
   - Peak meter adjustments (17)~(19).
   - Limiter adjustment (20).
   - Flat response tuning system adjustments (21)~(25).
   - Dolby-Nr adjustments (26)~(28).
4. Unless otherwise indicated, use the LINE IN/REC jack for the input and the LINE OUT/PLAY jack for the output.



6. Che
Rating

8. Cr
Settin
Metho
Rating

7. Bia
Setti
Meth
Ratir

NOTES:
1. B(+) pattern, B(–) pattern,
2. Voltage value is reference value measure (50 k-ohms/V, DC) with silent recording ( ) is value during recording.
3. The adjustments can be divided in the fo They can be performed in any order but the numerical order of adjustments withi
   - Playback adjustments (1)~(4).
   - Recording adjustments (5)~(8).
   - Rec./pb. adjustments (9)~(16).
   - Peak meter adjustments (17)~(19).
   - Limiter adjustment (20).
   - Flat response tuning system adjustme
   - Dolby-Nr adjustments (26)~(28).
4. Unless otherwise indicated, use the LINE for the input and the LINE OUT/PLAY

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

6. Check of the Bias Osc Frequency

Rating: 100 ±5kHz

8. CrO_2 Bias Current Adjustment

Settings: TAPE SELECTOR switch: CrO_2
Test tape: CS-20
BIAS FINE control: Center
RECORDING LEVEL control: MAX.
OUTPUT LEVEL control: MAX.
DOLBY-NR switch: OFF
Input signal: 500 Hz/5 kHz, OVU –20dB

Method: Record a 500 Hz and 5 kHz signal and then play back the recorded section. Increase the bias current if the 5 kHz output is high with respect to the 500 Hz reference, and decrease the bias current if the 5 kHz output level is 10W.
L-ch: TC-501,
R-ch: TC-502

Rating: 500 Hz/50 kHz 0±0.5dB

7. Bias Trap Adjustment

Settings: TAPE SELECTOR switch: CrO_2
RECORD LEVEL control: MAX.
OUTPUT LEVEL control: MAX.
Test point: L-ch: TP-1,
R-ch: TP-2

Method: With the model set to the recording mode, adjust so that the voltage at the test point is reduced to the minimum.
L-ch: L113,
R-ch: L114

Rating: Less the 1V bias leakage

21. 400Hz/8KHz Osc Adjustment

Settings: INPUT SELECTOR switch: TEST
OUTPUT LEVEL control: MAX.
Output: LINE OUT
Recording mode

Method: Turn the SFR801, 802 right round in the direction of the arrows. Then gradually turn resistor SFR801 for the 400 Hz oscillator adjustment in the opposite direction, and stop the osciallator rotating once it starts to oscillate. Also, adjust resistor SFR802 for the 8 kHz oscillator adjustment in the same way.

Rating: 400 Hz ±10%, 8 kHz ±10%

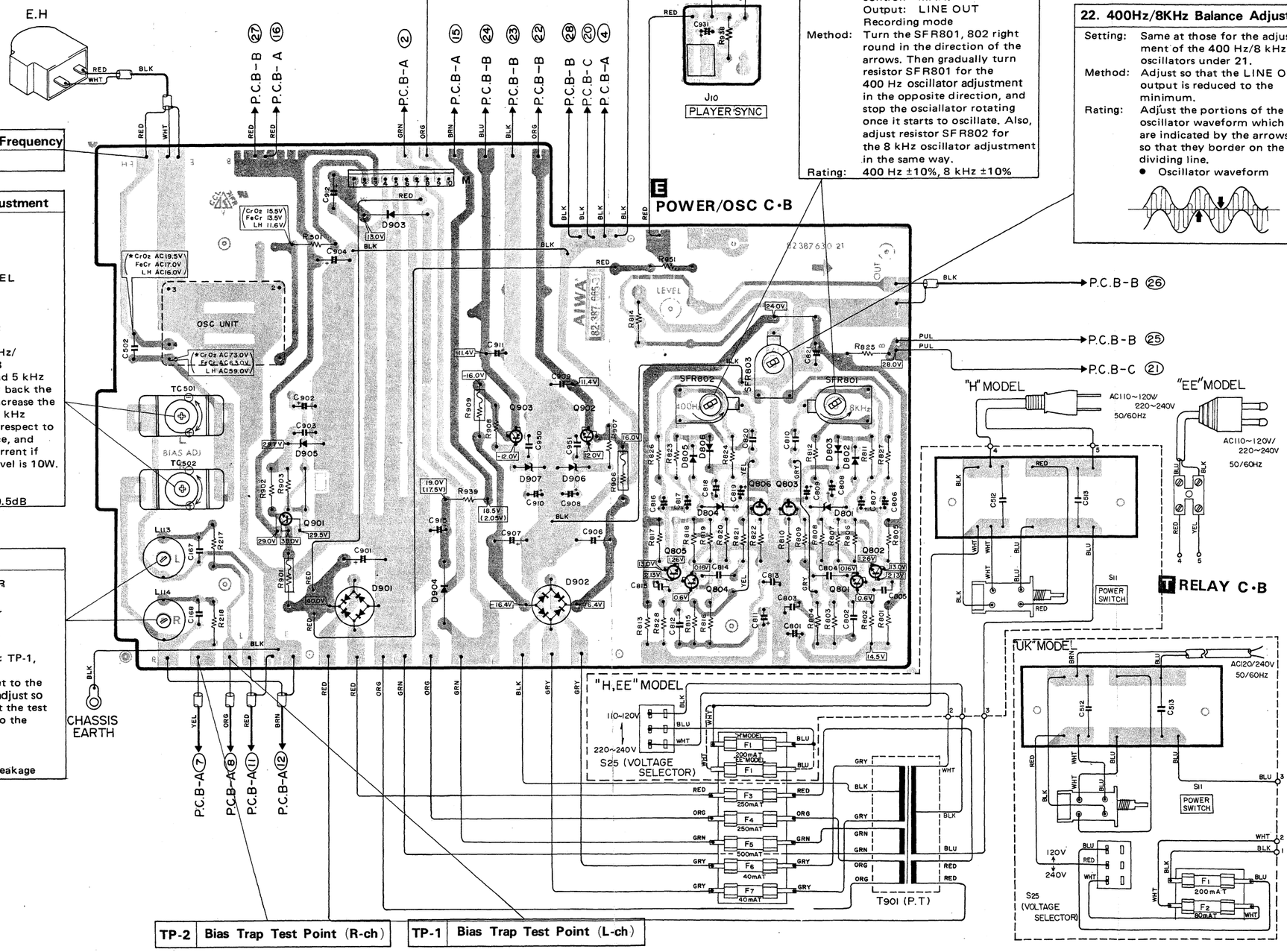
22. 400Hz/8KHz Balance Adjustment

Setting: Same at those for the adjustment of the 400 Hz/8 kHz oscillators under 21.

Method: Adjust so that the LINE OUT output is reduced to the minimum.

Rating: Adjust the portions of the oscillator waveform which are indicated by the arrows to so that they border on the dividing line.

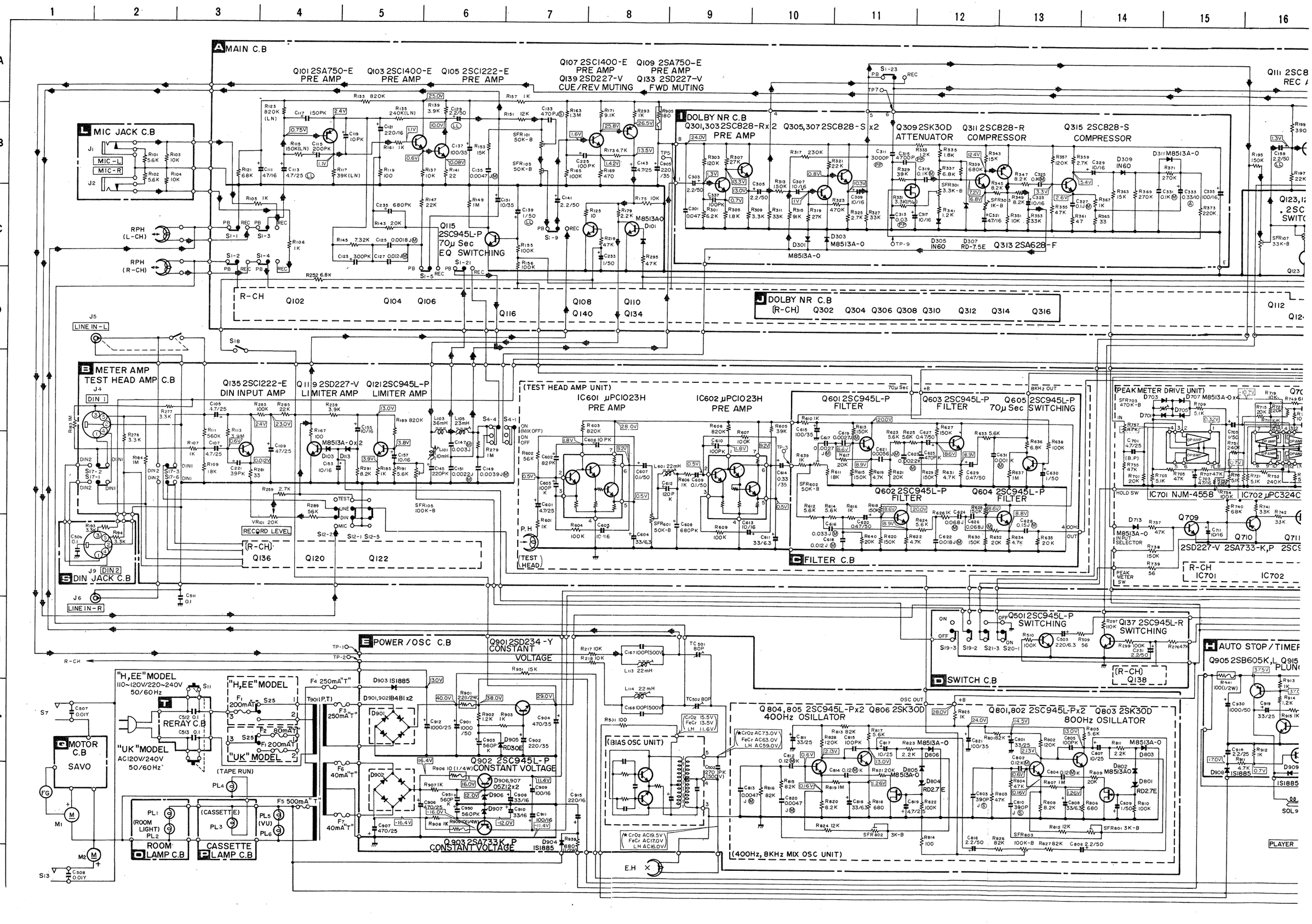
- Oscillator waveform



+) pattern, B(–) pattern, other patterns.
/alue is reference value measured with a tester
ms/V, DC) with silent recording.
/alue during recording.
stments can be divided in the following groups.
be performed in any order but be sure to keep to
rical order of adjustments within the groups:
ack adjustments (1)~(4).
ding adjustments (5)~(8).
pb. adjustments (9)~(16).
meter adjustments (17)~(19).
er adjustment (20).
esponse tuning system adjustments (21)~(25).
/-Nr adjustments (26)~(28).
herwise indicated, use the LINE IN/REC jack
iput and the LINE OUT/PLAY jack for the output.

AIWA

SCHEMATIC DIAGRAM



15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Q111 2SC828A-R REC AMP
Q113 2SC828A-R REC AMP
IC101 TA7140AP PHONES AMP
Q904 2SD571-K,L CONSTANT VOLTAGE
Q914 2SC945L-P FWD MUTING
J3 HEAD PHONES
R-CH
J7 LINE OUT-L
Q123,125,127,129,131 . 2SC945L-P x5 SWITCHING
Q502 2SC1634-B SWITCHING
Q112 Q124 Q114 Q126 IC102 Q128 Q130 Q132
BIAS C.B
REC LED C.B
J8 LINE OUT-R
R C.B
Cr02 AUTO C.B
Q7012SA750-E Q7032SK68M,N
Q117 2SC945L-P VU METER AMP
LM1 PEAK/VU
LM2 PEAK/VU
Q709 Q710 Q711 Q712 Q705 Q707
2SD227-V 2SA733-K,P 2SC945L-P 2SA733-K,P 2SK68-MN
NJM-4558 IC702 μPC324C 2SK68M,N IC703 NJM-4
R-CH IC701 IC702 Q702 Q704 Q708 Q713 Q706
Q118
H AUTO STOP/TIMER START C.B
Q905 2SB605K,L Q915 2SC945L-P Q906 2SC945L-P PLUNGER DRIVE
Q907 2SC945Q IC901 DN835 Q913 2SD571-K,L Q908 2SC945L-P Q912 2SA733K,P Q909~911 2SC945Q x 3
HALL IC PLUNGER DRIVE
G SYNC-JACK C.B
K MEMORY SWITCH C.B
M STOP MUTING C.B
J10 PLAYER SYNC

2SA750 2SC1400 2SC1222 2SC945 2SC828 2SD227
2SA733

2SA628 2SB605 2SK30 2SK68 1S188 IN60 1S1885 M8513A 1S1555

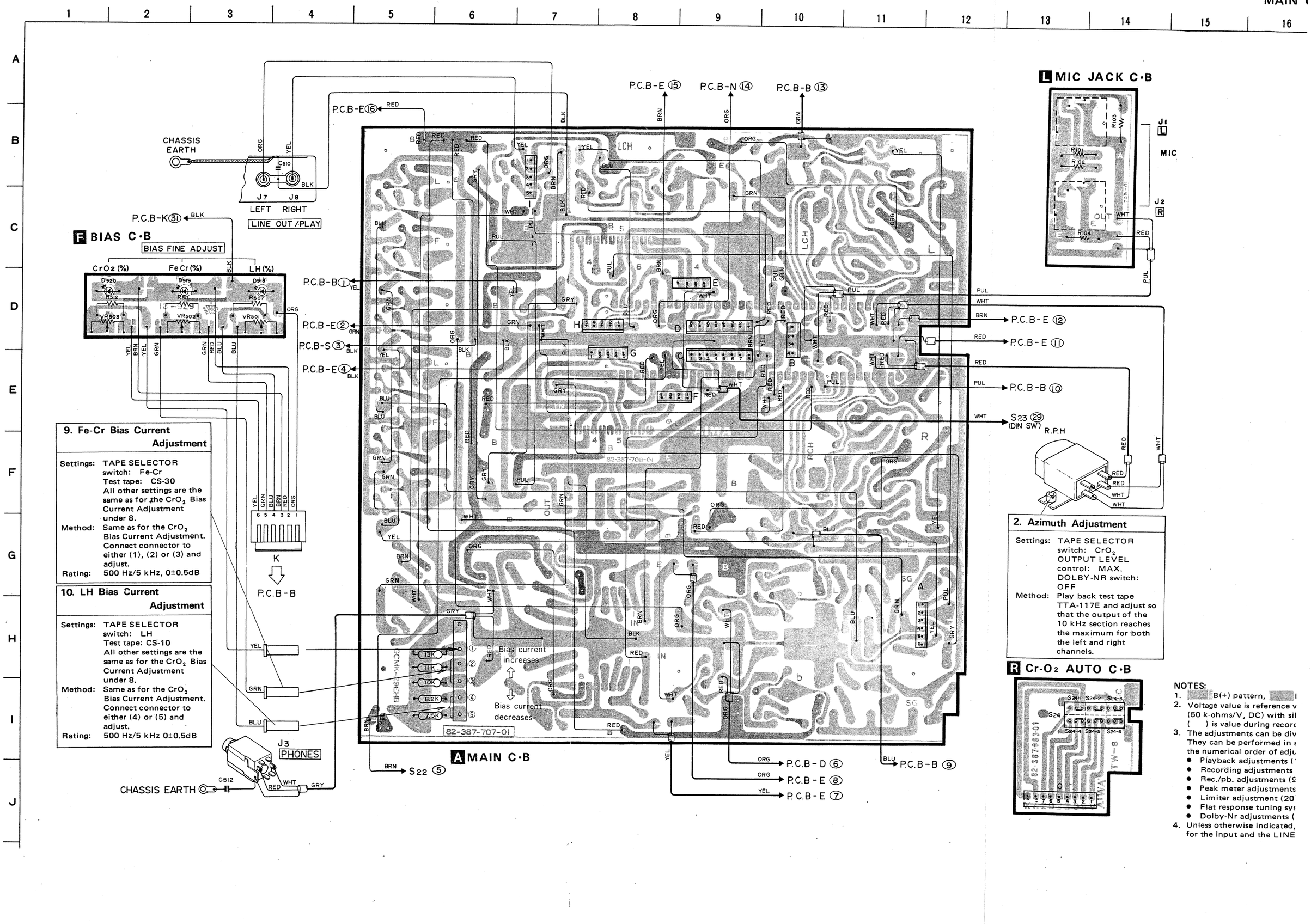
2SD571 2SD234 05Z12 RD30E RD2.7E WZ-240 05Z-5.1L RD7.5E 1B4B1 SLP-114 SEL-301GF SLP-614B SEL-101RF

S1-1~24 ····· REC/PB (PB)
S2-1~2 ····· TAPE SELECTOR EQ (LH)
S3-1~2 ····· TAPE SELECTOR BIAS (LH)
S4-1~4 ····· DOLBY-NR (ON)
S5-1~6 ····· STOP MUTING (STOP)
S6 ····· ----------
S7 ····· MAIN MOTOR SW (OFF)
S8 ····· AUTO STOP SW (OFF)
S9 ····· PAUSE SW (OFF)
S10 ····· MEMORY (OFF)
S11 ····· POWER (ON)
S12-1~8 ····· INPUT SELECTOR (LINE, DIN)
S13 ····· CASSETTE CARRIER MOTOR SW (OFF)
S14 ····· REW SW (OFF)
S15 ····· COUNTER SW (OFF)
S16 ····· ----------
S17 ····· DIN SW (DIN-1)
S18 ····· CUE/REV MUTING (OFF)
S19-1~4 ····· LIMITER (OFF)
S20-1~4 ····· PEAK (ON)
S21-1~4 ····· PEAK HOLD (ON)
S22 ····· CUE/REV BIAS CUT (OFF)
S23-1.2 ····· DIN SW (VARIABLE)
S24-1~4 ····· CrO2 AUTO SW (CrO2)
S25 ····· VOLTAGE SELECTOR (115V)

NOTES:

1) —— B(+) power supply —— B(−) power supply
2) ➡ Signal path ➡ Rec. path
3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
4) Resistors with no designation have a rated power of ¼W and a tolerance of ±5%.
5) Capacitors with no designation have a dielectric strength of less than 50WV.
6) Ceramic capacitor symbols:
   - For temperature compensation (SL)
   - High dielectric constant system (YY)
   - High dielectric constant system (YP, YZ)
7) The only capacitor tolerances indicated are ±2% (G), ±5% (J) and ±10% (K).
8) Explanation of symbols
   - (M) Mylar capacitor
   - (S) Styrol capacitor
   - (T) Tantalum capacitor
   - (LL) Low-leakage capacitor
   - (PP) Polypropylene film capacitor
   - (LN) Low-noise resistor

* This schematic diagram is subject to change without notice in the interests of improved performance.



9. Fe-Cr Bias Current Adjustment

Settings: TAPE SELECTOR switch: Fe-Cr
Test tape: CS-30
All other settings are the same as for the CrO_2 Bias Current Adjustment under 8.

Method: Same as for the CrO_2 Bias Current Adjustment. Connect connector to either (1), (2) or (3) and adjust.

Rating: 500 Hz/5 kHz, 0±0.5dB

10. LH Bias Current Adjustment

Settings: TAPE SELECTOR switch: LH
Test tape: CS-10
All other settings are the same as for the CrO_2 Bias Current Adjustment under 8.

Method: Same as for the CrO_2 Bias Current Adjustment. Connect connector to either (4) or (5) and adjust.

Rating: 500 Hz/5 kHz 0±0.5dB

2. Azimuth Adjustment

Settings: TAPE SELECTOR switch: CrO_2
OUTPUT LEVEL control: MAX.
DOLBY-NR switch: OFF

Method: Play back test tape TTA-117E and adjust so that the output of the 10 kHz section reaches the maximum for both the left and right channels.

NOTES:

1. [redacted] B(+) pattern, [redacted]
2. Voltage value is reference v (50 k-ohms/V, DC) with sil ( ) is value during record
3. The adjustments can be div They can be performed in a the numerical order of adju
   - Playback adjustments (
   - Recording adjustments
   - Rec./pb. adjustments (S
   - Peak meter adjustments
   - Limiter adjustment (20
   - Flat response tuning sys
   - Dolby-Nr adjustments (
4. Unless otherwise indicated, for the input and the LINE

MAIN CIRCUIT BOARD

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

13. LH Recording Equalizer Adjustment

Settings: TAPE SELECTOR switch: LH
Test tape: CS-10
Input signal: 500 Hz/13 kHz, OVU-20dB
All other settings are the same as for the CrO_2 Recording Equalizer Adjustment under 11.
Method: Same as for the CrO_2 Recording Equalizer Adjustment.
L-ch: L111,
R-ch: L112
Rating: 500 Hz/13 kHz $0^{+0.5}_{-1.5}$dB

12. Fe-Cr Recording Equalizer Adjustment

Settings: TAPE SELECTOR switch: Fe-Cr
Test tape: CS-30
Input signal: 500 Hz/16 kHz, OVU-20dB
All other settings are the same as for the CrO_2 Recording Equalizer Adjustment under 11.
Method: Same as for the CrO_2 Recording Equalizer Adjustment.
L-ch: L109,
R-ch: L110
Rating: 500 Hz/16 kHz $0^{+0.5}_{-1.5}$dB

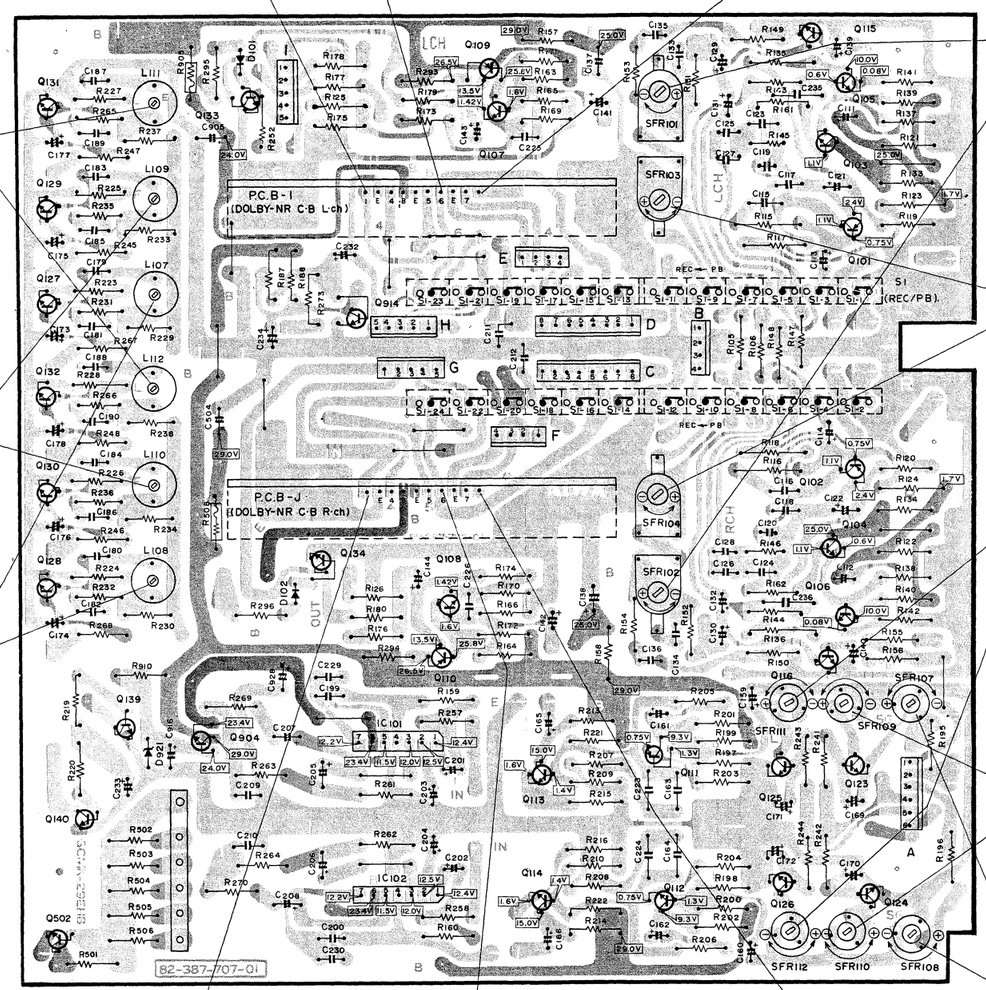
11. CrO_2 Recording Equalizer Adjustment

Settings: TAPE SELECTOR switch: CrO_2
Test tape: CS-20
BIAS FINE control: Center
RECORD LEVEL control: MAX.
OUTPUT LEVEL control: MAX.
DOLBY-NR switch: OFF
Input singal: 500 Hz/15 kHz, OVU-20dB
Method: Record a 500 Hz and 15 kHz signal and then play back the recorded section. Adjust so that the 15 kHz output level becomes flat with respect to the 500 Hz reference.
L-ch: L107,
R-ch: L108
Rating: 500 Hz/15 kHz $0^{+0.5}_{-1.5}$dB

TP-5 Dolby-Nr 1st Teminal (L-ch)

TP-7 Dolby-Nr 6th Terminal (L-ch)

TP-9 Q309 Gate



A MAIN C·B

TP-6 Dolby-Nr 1st Terminal (R-ch)

TP-8 Dolby-Nr 6th Terminal (R-ch)

TP-10 Q310 Gate

4. Playback Frequency Characteristic Adjustment

Settings: TAPE SELECTOR switch: CrO_2
OUTPUT LEVEL control: MAX.
DOLBY-NR switch: OFF
Method: Play back test tape TTA-117E, and adjust the 1 kHz output so that the 10 kHz output becomes 0dB with respect to the reference.
L-ch: SFR101,
R-ch: SFR102

3. Playback Level Adjustment

Settings: TAPE SELECTOR switch: LH
OUTPUT LEVEL control: MAX.
DOLBY-NR switch: OFF
Method: Play back test tape TTA-161 and adjust so that the output becomes 1.1V ±0.05V.
L-ch: SFR103,
R-ch: SFR104

16. LH Rec/Pb. Sensitivity Adjustment

Settings: TAPE SELECTOR switch: LH
Test tape: CS-10
All other settings are the same as for the CrO_2 Rec./pb. Sensitivity Adjustment under 14.
Method: Same as for the CrO_2 Rec./pb. Sensitivity Adjustment.
L-ch: SFR111,
R-ch: SFR112
Rating: 0.775V ±0.25dB

15. Fe-cr Rec./Pb. Sensitivity Adjustment

Setting: TAPE SELECTOR switch: Fe-Cr
Test tape: CS-30
All other settings are the same as for the CrO_2 Rec./pb. Sensitivity Adjustment under 14.
Method: Same as for the CrO_2 Rec./pb. Sensitivity Adjustment.
L-ch: SFR109,
R-ch: SFR110
Rating: 0.775V ±0.25dB

14. CrO_2 Rec./Pb. Sensitivity Adjustment

Settings: TAPE SELECTOR switch: CrO_2
Test tape: CS-20
BIAS FINE control: Center
RECORD LEVEL control: MAX.
OUTPUT LEVEL control: MAX.
DOLBY-NR switch: OFF
Input signal: 400 Hz OVU
Method: Record the signals and them play back the recorded section. Adjust the recording current so that the output level becomes 0.775V.
L-ch SFR107,
R-ch: SFR108
Rating: 0.775V ±0.25dB

NOTES:
1. B(+) pattern, B(−) pattern, other patterns.
2. Voltage value is reference value measured with a tester (50 k-ohms/V, DC) with silent recording.
( ) is value during recording.
3. The adjustments can be divided in the following groups. They can be performed in any order but be sure to keep to the numerical order of adjustments within the groups:
   - Playback adjustments (1)~(4).
   - Recording adjustments (5)~(8).
   - Rec./pb. adjustments (9)~(16).
   - Peak meter adjustments (17)~(19).
   - Limiter adjustment (20).
   - Flat response tuning system adjustments (21)~(25).
   - Dolby-Nr adjustments (26)~(28).
4. Unless otherwise indicated, use the LINE IN/REC jack for the input and the LINE OUT/PLAY jack for the output.

Symbol No.	Part No.	Description
D901,902	87-027-163-01	Encapsulated diode, 1B4B1
D903,904	87-027-083-01	Diode, 1S1885
D905	87-027-189-01	Zener diode, RD30E
D906,907	87-027-224-01	Zener diode, 05Z12L
L113,114	82-371-644-01	Coil, 22mH
OSC UNIT	82-387-618-11	OSC unit
TC501,502	82-387-604-01	Trimmer, 80pF
SFR801,802	87-021-385-01	Semi-fixed resistor, 3kΩ-B
SFR803	87-021-388-01	Semi-fixed resistor, 100kΩ-B
PIN-M	87-032-780-01	Pin, 10P
		<Resistors>
R906,909	87-029-017-01	10Ω 1/4W Fuse resistor
R901	87-029-014-01	22Ω 1/2W Fuse resistor
		<Capacitor>
C167,168	87-968-410-01	100pF 500V Dipt mica
≪BIAS CIRCUIT BOARD SECTION≫		
PCB-F	82-387-676-21	Bias circuit board
D918	82-387-670-01	Light emitting diode, SEL-301GF (LH)
D919	87-026-086-01	Light emitting diode, SLP-614B (FeCr)
D920	82-387-622-01	Light emitting diode, SEL-101RF (CrO_2)
VR501,502	82-387-690-01	Volume, 20kΩ-KS (BIAS FINE, ADJUST LH, FeCr)
VR503	82-387-689-01	Volume, 50kΩ-KS (BIAS FINE ADJUST CrO_2)
≪SYNC JACK CIRCUIT BOARD SECTION≫		
PCB-G	82-387-667-11	Sync jack circuit board
J10	87-032-849-01	Jack 2.5φ (PLAYER SYNC)
≪AUTO STOP/TIMER START CIRCUIT BOARD SECTION≫		
PCB-H	82-387-627-21	Auto stop/Timer start circuit board
IC901	87-027-160-01	Hall IC, DN835
Q905	89-206-051-21	Transistor, 2SB605 (K,L)
Q906,908,915	89-309-456-01	Transistor, 2SC945L (P)
Q907,909,910 911	89-309-455-01	Transistor, 2SC945 (Q)
Q912	89-107-335-61	Transistor, 2SA733 (K,P)
Q913	89-405-711-21	Transistor, 2SD571 (K,L)
D908,909,910	87-027-083-01	Diode, 1S1885
D911,912,913 924	87-027-097-01	Diode, 1S1555
D915	87-027-225-01	Zener diode, 05Z-5.1L
D922,923	88-052-188-01	Diode, 1S188 (FM)
PIN-N	87-032-775-01	Pin, 5P
		<Resistor>
R941	87-029-028-01	100Ω 1/2W Fuse resistor
≪DOLBY-NR CIRCUIT BOARD SECTION≫		
PCB-I,J	82-379-608-11	Dolby-NR circuit board
Q301,302,303 304,311,312	89-308-284-01	Transistor, 2SC828 (R)
Q305,306,307 308,315,316	89-308-285-01	Transistor, 2SC828 (S)
Q309,310	82-371-625-01	FET, 2SK30D
Q313,314	89-106-285-01	Transistor, 2SA628 (F)
D301,302,303 304,311,312	87-026-016-01	Diode, M8513A (O)

Symbol No.	Part No.	Description
D305,306,309 310	88-051-060-01	Diode, 1N60
D307,308	87-371-647-01	Zener diode, RD7.5 (E)
SFR301,302	87-021-423-01	Semi-fixed resistor, 3.3kΩ-B
SFR303,304	87-021-421-01	Semi-fixed resistor, 1kΩ-B
	82-387-625-01	Pin, 10P
		<Resistor>
R331,332	82-371-652-01	3.3kΩ 1/4W ±1%
		<Capacitors>
C311,312	82-375-608-01	0.003μF PP
C315,316	82-371-643-01	0.0047μF PP
C313,314	82-375-609-01	0.03μF PP
C333,334	87-015-099-01	0.33μF 10V Aluminum solid
≪MEMORY SWITCH CIRCUIT BOARD SECTION≫		
PCB-K	82-387-711-01	Memory switch circuit board
S10	87-031-360-01	Push switch (MEMORY)
≪MIC JACK CIRCUIT BOARD SECTION≫		
PCB-L	82-387-709-01	Mic jack circuit board
J1,2	87-032-749-01	Jack 6.3φ (MIC-L,R)
≪STOP MUTING CIRCUIT BOARD SECTION≫		
PCB-M	82-387-710-01	Stop muting circuit board
S5	87-031-239-01	Slide switch (STOP MUTING)
≪REC LED CIRCUIT BOARD SECTION≫		
PCB-N	82-380-662-21	REC LED circuit board
D921	87-026-083-01	Light emitting diode, SLP-114 (REC)
≪ROOM LAMP CIRCUIT BOARD SECTION≫		
PCB-O	82-380-704-01	Room lamp circuit board
PL1,2	82-380-626-01	Pilot lamp, 8V 100mA (ROOM LAMP)
≪CASSETTE LAMP CIRCUIT BOARD SECTION≫		
PCB-P	82-387-678-01	Cassette lamp circuit board
PL3	82-380-626-01	Pilot lamp, 8V 100mA (CASSETTE LAMP)
≪CrO_2 AUTO CIRCUIT BOARD SECTION≫		
PCB-R	82-387-683-01	CrO_2 AUTO circuit board
S24	87-031-239-01	Slide switch (CrO_2 AUTO)
PIN-O	87-032-779-01	Pin, 9P
≪DIN JACK CIRCUIT BOARD SECTION≫		
PCB-S	82-387-696-01	DIN jack circuit board
J5,6,7 8,9	82-386-621-01	Jack combination (LINE OUT, LINE IN, DIN2)
≪RELAY CIRCUIT BOARD SECTION≫		
PCB-T	82-387-688-01	Relay circuit board
		<Capacitor>
C512,513	84-190-622-01	0.1μF 250V Line capacitor
≪MISCELLANEOUS≫		
T901	82-387-684-01	Power transformer (H,EE model only)
T901	82-387-685-01	Power transformer (UK model only)
RPH	82-387-614-01	REC/PB head
EH	82-387-615-01	Erase head
SOL901,902	82-374-634-11	Solenoid
M2	82-380-604-11	Miniaturemotor (CASSETTE CARRIER MOTOR)

CTC-CSA-USA

Symbol No.	Part No.	Description
M1,PCB-Q	82-387-612-31	Motor, DC-EG (FG) (CASSETTE MOTOR)
PL4	82-380-659-01	Pilot lamp (TAPE RUN)
LM1,2	82-387-603-21	Level meter (PEAK/VU)
PH	87-387-616-31	Search head
J3	87-032-748-01	Jack 6.3φ (PHONES)
S7,13	82-380-621-01	Sub-miniature switch (MAIN MOTOR, CASSETTE CARRIER MOTOR)
S8,14	87-031-261-01	Micro switch (AUTO STOP, REW)
S9	82-380-658-11	Leaf switch (PAUSE)
S11	87-031-342-01	Push switch (POWER)
S15	87-040-080-11	Counter
S18	82-370-604-11	Leaf switch (CUE/REV, MUTING)
S22	82-380-681-01	Leaf switch (CUE/REV BIAS CUT)
S23	82-375-623-01	Slide switch (DIN OUTPUT LEVEL)
S25	87-031-364-01	Slide switch (VOLTAGE SELECTOR) (H, EE model only)
S25	87-031-343-01	Slide switch (VOLTAGE SELECTOR) (UK model only)
F1	87-035-079-01	Fuse, 200mA "T"
	87-098-009-01	Fuse label, 200mA "T"

Symbol No.	Part No.	Description
F2	87-035-123-01	Fuse, 80mA "T" (UK model only)
	87-098-005-01	Fuse label, 80mA "T" (UK model only)
F3,4	87-035-144-01	Fuse, 250mA "T"
	87-098-010-01	Fuse label, 250mA "T"
F5	87-035-075-01	Fuse, 500mA "T"
	87-098-013-01	Fuse label, 500mA "T"
F6,7	87-035-151-01	Fuse, 40mA "T"
	87-098-002-01	Fuse label, 40mA "T"
	82-387-686-01	Fuse holder, 7P
	82-387-637-01	Connector, 1P (YEL)
	82-387-674-01	Connector, 1P (GRN)
	82-387-675-01	Connector, 1P (BLU)
CON-F	82-387-672-11	Connector ass'y, 4P
CON-E	82-387-673-11	Connector ass'y, 4P
CON-B	82-387-677-11	Connector ass'y, 4P
CON-N	82-387-638-01	Connector ass'y, 5P
CON-I	82-387-682-11	Connector ass'y, 5P
CON-G	82-387-643-11	Connector ass'y, 5P
CON-H	82-387-644-11	Connector ass'y, 5P
CON-K	82-387-641-01	Connector ass'y, 6P
CON-A	82-387-647-11	Connector ass'y, 6P
CON-L,O	82-387-687-01	Connector ass'y, 6P, 9P
CON-J	82-387-671-01	Connector ass'y, 7P
CON-D	82-387-645-11	Connector ass'y, 8P
CON-C	82-387-646-11	Connector ass'y, 8P
CON-M	82-387-639-11	Connector ass'y, 10P

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